THE RAILWAY GAZETTE

A Journal of Management, Engineering and Operation

INCORPORATING

The Railway Engineer · TRANSPORT · The Railway News

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DIESEL RAILWAY TRACTION SUPPLEMENT

The August issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price* 1*s.*

DISPATCH OF THE "RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders No. 1190 *of* 1940, *and No.* 359 *of* 1941

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:—

Mondays to Fridays - 9.30 a.m. till 5.0 p.m.

The office is closed on Saturdays

Towards a New Railway Agreement

ALTHOUGH official silence has been maintained as to the negotiations between the Government and the Chairmen of the railway companies concerning the modification of the financial agreement with the railways, to which Lord Leathers referred in his interview with us, recorded in our July 4 issue, certain facts are gradually becoming clear. In the House of Commons on July 16, as is shown at page 12 a Question by Mr. L. Silkin elicited from the Parliamentary Secretary to the Ministry of War Transport a reference to the "Government's decision not to allow an increase of railway fares and freight rates." That in itself makes it clear that the redrafting of the agreement, as was suggested in an editorial article of June 13, must be extensive. It suggests too, as indeed is taken for granted in some quarters, that the Government has now decided on a policy of subsidy, and in this way is prepared to sustain the public and the trading community against the impact of increased transport costs. It is a pity that the decision as to the form that the modified agreement is to take could not have been reached in time for its details to be made public before the announcement of the half-yearly dividends made by the companies on Friday last and which are given in detail at page 122. The railway stockholder is once again left in the dark as to the conditions and terms under which his assets are being operated and, although this position is not new to him, it does not become more satisfactory with the growth of the custom. One can only hope that the impending agreement may prove final for the duration of the war.

Government Control of Undertakings

New powers for securing effective control of an undertaking carried on by a company, the control of which has been taken over by the Government, are contained in an Order in Council made on July 18. This Order permits the removal and replacement of any person with managerial authority who acts, or has acted, so as to obstruct the authorised controller in the performance of his functions. The Order also gives authority for the acquisition, at a fair price, of all the shares in a company, and their transfer (with Treasury consent) to nominees. A person who has been removed from one office will not be allowed to hold another in the same company without permission, nor will a person appointed to hold any office be entitled to remuneration by the company unless by a specific agreement with the company. The Order also makes it incumbent on holders of shares to surrender them to the transferees, who will then become entitled to all the advantages of membership of the company, notwithstanding that they are not registered members. It is also provided that the company cannot be wound up or any person rendered liable to payment of its debts because the number of members is below that required by the law; nor will a director have to resign merely because he ceases to hold qualifying shares. The Order lays down that the price to be paid for shares in a company is to be that which, in the opinion of the Treasury, is not less than the value of those shares as between a willing buyer and a willing seller, on the date of the Order. The provisions of the Order (S.R. & O. 1941, 1023) are worth study by stockholders, directors, and managers of industrial undertakings, particularly those engaged on Government work.

The Railway Press in Germany

The well-known German technical transport journal *Verkehrstechnische Woche*, established in 1907, has been renamed *Grossdeutscher Verkehr* (Transport in Greater Germany) and is now the official organ of the Reich Ministry of Transport. Under its old name this journal was the organ of several engineering associations and dealt authoritatively with all forms of transport. It made a feature of special numbers, which still provide a fund of useful reference. With the wide adoption of mechanisation in marshalling yards and the appointment of a special association of experts to study the question in detail, the *Verkehrstechnische*

Woche undertook the publication of its conclusions, and a whole series of special numbers was issued, forming the most detailed and extensive contribution to marshalling yard operation and equipment ever produced. For many years the policy of the paper was directed mainly by two well-known engineering writers, Blum and Baumann. Dr. Dorpmüller, Reich Minister of Transport, and Herr Kleinmann, his assistant, contribute to the first issues of the new paper, dealing with the complexity of present-day transport needs and the co-ordination question.

Great Western of Brazil Railway

In gross and net earnings this company did well during 1940, and fully earned its debenture interest, but the balance of trade between the United Kingdom and Brazil did not provide a sufficient surplus of sterling to enable the Director of Exchange to grant the company more than a small part of its requirements. The company is accordingly unable to overtake any arrears of debenture interest owing to lack of sufficient remittances. Receipts in milreis for 1940 were the highest in the company's history. In sterling, gross receipts showed an improvement of £71,257 in comparison with 1939, and working expenses were £54,777 higher. Results are compared in the accompanying table :—

	1939	1940
Kilometres open	1,637	1,637
Passengers	3,468,597	3,688,182
Tons, goods and livestock	1,750,482	1,980,964
Ton-km., goods and livestock	130,238,273	138,599,329
Operating ratio, per cent.	81·28	79·37
	£	£
Passenger receipts	107,103	122,538
Goods receipts	348,642	397,245
Gross receipts	482,779	554,036
Working expenses	392,487	447,264
Net receipts	90,292	106,772

Ton-kilometrage reached a new high record, and the increase of 30 per cent. in "work done" in comparison with the bumper year 1929, was effected with a reduction in engine-kilometres. There has been steady improvement in the percentage of sugar carried by rail, and as a further result of efficient operation better train loads have been secured.

Eire Transport Tribunal Report

So long ago as December, 1938, the Eire Government established a tribunal to examine the question of public transport, including the circumstances contributing to the unfavourable financial position of the Great Southern Railways Company. Examination of witnesses took almost four months, and the majority and minority reports were completed in August, 1939, before the outbreak of war, but were not made public until July 19. The principal recommendations of the majority report, extracts from which are given at page 120, are the formation of a National Transport Council for the review of all forms of public transport during the next five years; replacing the present board of the Great Southern Railways Company for the same period by a board of three, with a Government-nominated chairman, to be assisted by two controllers; a 4 per cent. Government-guaranteed debenture stock issue of £1,250,000 by the railway company; increased duties on all motor vehicles not operated by statutory transport undertakings; and the pooling between the Dublin United Transport Company and the railway companies of competitive traffic in the Dublin area. The minority report dissents from most of the majority proposals and recommends State ownership of the Great Southern Railways and a subsidy to the Great Northern Railway, the position of which is complicated by the fact that three-fifths of its mileage is in Northern Ireland.

Assab and its Proposed Railway

The Italian port of Assab in southern Eritrea, at the entrance to the Red Sea, which was captured on June 11 by Allied troops landed from the sea, is the second port in Eritrea, but, unlike Massaua, the chief port, it is without railway communication with the hinterland. As recently as 1937, however, the Italians planned to build a railway of their own from Addis Ababa to Assab so as to be independent of French interests; as is well known, the existing line from Addis Ababa to the coast runs through 56 miles of French Somaliland to secure access to the port of Djibouti. The railway to Assab was intended to follow generally the motor road then being built. It was also estimated that the new railway, which was to pass through Dessie, would reduce the distance between Addis Ababa and the Red Sea by some 300 km. (186 miles). Actually, only the road was constructed, and the projected railway may have been merely a threat to obtain better terms from the French Addis Ababa-Djibouti Railway.

Munitions Output in India

On July 16 Sir Muhammad Zafrulla Khan, Supply Member of the Government of India, broadcast on the war output of that country. The subject closely concerns the railways, for, as he said, 23 railway workshops, as well as 230 trade workshops, are now assisting the Government ordnance factories to produce 700 items of munitions involving over 20,000,000 separate articles. Guns are being turned out at 5 times and shells 24 times the pre-war rate of output, and the supplies of automatic weapons and rifles have enormously increased. Apart from India's own requirements, 600,000 filled shells and 150,000,000 rounds of small arms ammunition have already been produced to meet overseas orders, and great strides have been made in the out-turn of armoured fighting vehicles, which is keeping pace with the supply of chassis from abroad. The production of armour plate by the Indian steel industry is increasing rapidly, and large quantities of machine tools are being made in India, as well as rails and rolling stock. Actually the last two items are not, of course, new products in India, which has been self-supporting as far as rails are concerned for many years, but doubtless the output of the great Tata steel works and rolling mills has now been increased considerably to meet overseas demands. It is probable that the railway workshops are participating in all the other activities, as they are the largest and best equipped, and some are entirely turned over to munitions production.

Assisting Trains out of Stations

When a locomotive which, in the ordinary way, is capable of dealing with the train loads allocated to it fails on an up grade which has to be negotiated from a standing start, it may be due not so much to the inability of the engine to accomplish its task as the conditions ruling on a particular occasion. If, on the other hand, this happens whenever the maximum loading is taken in adverse weather, the use of an assistant engine at the rear of the train becomes imperative. There are certain terminal stations where, immediately after the start, track curvature is succeeded by a steep incline, and there is neither sufficient time nor distance for the train engine to work up the necessary momentum to enable it to make the climb unaided. Disadvantages associated with the use of assistant locomotives at the rear include the loss of user of such engines often for as much as half an hour at a time, and the occupation of platform space that cannot be spared with long trains which must not be allowed to obstruct points and crossings at the outward end. To avoid these drawbacks, the usual practice is to shunt the trains in from the forward end so that, with this accomplished, the shunting locomotive is freed for other work; that, however, means that assistance at the rear of the train is not available when required. The alternative of having an engine standing ready on another line to run in from behind after the train has started is open to obvious objection.

Logging Railways

The part played by railway operation in the extensive logging industry of the United States is the subject of an article in the May issue of the American *Railroad Magazine*. In the Pacific Coast district alone there are 6,000 miles of logging railways, and of the total annual logging expenditure on this coast, the railway operating proportion may rise to as much as 40 per cent. on individual roads. From 20 to 60 per cent. of the mileage of any one company may be in use only as temporary spur tracks for a few months, and

may then be taken up and relaid elsewhere, as new areas of timber are opened up. The engineering operations connected with logging are now regarded as of such importance that courses have been established and degrees are awarded in logging engineering at several western universities. Most structures on the logging roads are in timber, and one of the companies has in use a timber trestle viaduct 1,130 ft. long and 230 ft. high, as an example of the problems that have to be faced. On main lines gradients are as steep as 1 in 25, and curves as sharp as 3½-ch. radius, but on the logging spurs 1 in 16 inclinations and 2-ch. radius curves are found, so that extreme flexibility of engine wheelbase is necessary in the motive power. This is met largely by such special designs as the Shay, in which a vertical engine is used to drive a flexible horizontal shaft driving all axles by spur gear, and the engine is carried on two bogies well spaced out. Oil fuel is generally used, to obviate spark-throwing. All the Western States have safety requirements governing the construction and operation of logging roads, but less stringent than those imposed on the ordinary railways.

High Speed and New Safety Devices

The many new problems which have had to be solved in car equipment and maintenance, as a result of the lengthy distances now covered at very high sustained speeds by many of the American streamliners, are evident by the specialised devices fitted to the latest " City " trains of the Chicago & North Western, Union Pacific, and Southern Pacific Railroads, running between Chicago and the Pacific Coast. These fittings include a journal alarm, controlled by a thermo-couple, which shows a red light in the engine cab if any journal runs hot, as well as a similar light on the affected coach; safety derailment guide flanges, forming a part of each bogie frame, which in the event of a derailment or broken axle prevent the bogie from twisting round and, except in severe casualties, are likely to keep the bogie concerned to the track; an automatic water spray, which sprinkles the wheels and prevents them from overheating when they are being braked on long falling gradients; an automatic sanding device which comes into operation ahead of each wheel in the event of an emergency stop, and can also be applied from the engine footplate; and an electric control which governs the degree of brake pressure in relation to speed, to prevent skidding. On the locomotive unit a thermostatic control rings an alarm bell in the cab if one of the diesel engines should overheat, and another automatic control stops the engines if there is any failure of the lubricating system. Governors are provided to keep the maximum speed within operating limits in districts through which there is a general restriction. Last, but not least, there is the Mars oscillating headlamp, which with its travelling beam makes it possible at level crossings to detect the approach of these flyers from long distances.

The Care of Locomotives

A class of modern locomotive notable for the general excellence of its performance in traffic (including ability to handle overloads without losing time), adaptability to express and stopping trains, and lightness on the track, may still have a reputation on some sections of the line for heavy maintenance charges and liability to breakdown. Such a locomotive is almost certainly one incorporating a good many of the latest refinements of mechanical engineering, and thus calls for greater care in handling and day-to-day maintenance than the simpler type of engine with which British railwaymen have for so long been familiar. We mention its drawbacks as being peculiar to certain sections of the line for the reason that they will become apparent only where there is less painstaking depot maintenance than on other sections where the work of the depot at which engines of the class may be stationed is of a high order. We have in mind one particular class of modern express locomotive which on one section, under careful supervision, gives complete satisfaction in service, whereas on another it is regarded as troublesome and liable to spend too much time in the shops.

Methods and Results

THE running by the L.M.S.R. and Great Western Railway of certain extra main-line trains on summer Saturdays prompts a reference to the peculiar difficulties under which the railways labour at the present time. The public has been notified that it must not, in present conditions, expect the existing train service to be amplified for what is usually the summer holiday season. Nevertheless the public, though it may have small expectations, continues to cherish great hopes, and presents itself to the railways in such considerable volume that they must either provide for the flow or call upon the authorities to dam it back. While the appeal to the public to restrict its travelling requirements may be presumed to have some effect, the fact remains that, with industrial activity in the country booming and many members of the Services rightly being allowed to travel to their homes—mostly distant—on leave, the demand for ordinary passenger accommodation on the railways is at times so much greater than that publicly advertised that extra trains have to be run. Hitherto it has been the general practice to run additional portions of those shown in the timetables, but, if more than a triplication is called for, serious delay to other traffic on the line may be entailed by the continuous track occupation caused by more than three successive expresses at 5-10 minute intervals. Goods or local trains booked to follow immediately after a main-line train has passed a certain point become liable to prolonged detention with consequent widespread disorganisation of traffic working. It should be remembered that, unlike peacetime schedules, the present bookings were generally designed with the idea that main-line trains would not be duplicated, but that intervals would be left between them for the accommodation of troop and other Government special trains.

Another aspect of the method adopted for the first time since the outbreak of war by certain railways for dealing with traffic rushes by putting on trains well spaced between those advertised as running regularly in the timetables, is that it tends to avoid congestion at stations. Where advertised trains are run in multiple section, as has lately been the general practice, passengers tend to congregate in such large numbers at the stations served that the normal facilities may become inadequate to cope with them, except at the cost of serious delay and much discomfort. When extra trains are run at the well-separated times announced by the L.M.S.R. and the G.W.R. for Saturdays during the summer (see p. 117 of our News Section), the station facilities are less likely to be taxed beyond their capacity for short periods while being left almost unused between times, and the result should not only minimise congestion, and so avoid delay on the line, but should undoubtedly ease the lot of the harassed traveller. Incidentally, the practice enables the railway companies to observe more effectively the Government's instruction—aimed at minimising risks during air raids—to avoid large congregations of passengers at stations. Finally, it is not out of place to recall the first principle of good organisation that, the result required having been specified, the experts must be allowed to devise without interference their own methods for achieving it. Thus, the result which the public requires of the railways is to convey them and their goods to their various destinations with the utmost despatch. The railways have their experts, who cannot efficiently discharge their task if they are subject to interference by instructions by civil servants with no practical railway experience. Such a procedure cannot fail to lead to confusion and inefficiency. In this connection, it has been stated in the press that restaurant and sleeping cars may shortly be withdrawn, in order to provide trains with more seating accommodation. We understand, however, that such a suggestion does not emanate from the railway companies, who, given a free hand to use existing equipment to the best advantage, could still continue to provide these amenities of travel, the lack of which would undoubtedly cause to many, especially large numbers of those who have to travel on business, considerable inconvenience, if not hardship, with a probable repercussion on the war effort by causing loss of sleep to many working at continuous high pressure.

The Railway Half Year

IN arriving at their decision as to the interim dividend distributions to be made in respect of the first six months of this year, the boards of the four main-line railway companies and of London Transport have been faced with peculiar difficulty. The first step in such a procedure is obviously to ascertain or to estimate, with reasonable precision, the net revenue which has accrued to each of the undertakings during the first half of the year. On this occasion, however, that has not been possible. The financial agreement between the railways and the Government, under which the undertakings are operated during the period of control, has been subject to revision since the end of 1940. No one can say with certainty at present how wide in its scope that revision may prove to be. There can be no doubt that the directors would have been justified in declaring their inability to deal with the matter of interim dividends, other than by making a brief announcement to the effect that because of the lack of basic information at their disposal they were unable to form a decision as to the payments which might be made. That they have not adopted this course will be gratifying to the large body of railway stockholders, and bears witness to the public spiritedness of the railway directorate in taking a broad view of their responsibility, and in abstaining from increasing the hardship which has already been experienced by so great a number of investors in home railway securities by reason of the meagreness of the return upon their capital. It would seem, however, that the directors of all the major controlled undertakings have reason to believe that the net revenue for the first half of the current year will not be less than that for the similar period of 1940. Then, it will be recalled, the net revenue of the pool was £20,867,000, or nearly £6,000,000 more than that for the first half of 1939, before the war had resulted in a vastly increased call being made on the services of the railways. The revenue from other sources, such as investments in road transport undertakings and the ownership of, and investments in, railways in Northern Ireland and Eire, raised the total net revenue to £21,848,500. It is indeed inconceivable that in view of the vast amount of work which the companies are being called upon to perform, and its essential value in the national endeavour, that the net product of the undertakings should not be in excess of that earned in the first six months of 1940. Net revenue of the pool returned for the first half of 1940 was very little in excess of the minimum net revenue under the financial agreement, which, for a full year, was £39,700,000.

In deciding to repeat their last year's dividend distributions the boards have fulfilled general expectations. Should it be possible for the whole of the current year to improve on the 1940 payments, the end of the present twelve month period will be the best opportunity to do so. The directors of the Great Western Railway Company are repeating their interim dividend of 1½ per cent. on the consolidated ordinary stock; at the end of last year a further 2½ per cent. was paid. The London Midland & Scottish 1923 preference stock again receives its full rate of 2 per cent.; at the end of the year 1½ per cent. was forthcoming on L.M.S.R. ordinary. London & North Eastern is again paying at the full rate on the 4 per cent. first preference stock and on the 5 per cent. redeemable preference stock (1955). For the whole of last year the holders of the second preference stock also received a distribution of 2 per cent. The Southern, as a year ago, is paying 2½ per cent. on the preferred ordinary stock; for 1940 1¼ per cent. was paid on the deferred. The London Passenger Transport Board is paying ¾ per cent. on its "C" stock on account of interest, which is at the same rate as the distribution made on August 23, 1940, for the year ended December 31, 1940. A notable omission from the statements is that which, since the railways came under control, has been issued by the Ministry of Transport. The omission of the White Paper by the Ministry of War Transport is obviously occasioned by the lack of finality in the present negotiations for the revision of the financial agreement which makes it impossible to compile the usual figures for the operations of the controlled undertakings. The statements of the undertakings are given at page 122.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Express Stops in Outer Suburbs

82, York Way, King's Cross,
London, N.1, July 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was very interested to note the Editor's remarks in the June 27 issue of THE RAILWAY GAZETTE in connection with my Letter to the Editor regarding the possibility of stopping some of the G.W.R. express trains at Ealing Broadway. The Editor remarks "It should not be overlooked that several convenient up and down line trains do regularly call at Ealing Broadway." I have today spoken direct to the enquiry office at Paddington station, and been advised that there is not a single train leaving, for example, Chippenham, during the whole of the afternoon which stops at Ealing Broadway. I was also advised that there is only one down train, namely, the 9.15 a.m., which stops at Ealing Broadway to pick up passengers who might wish to journey to Chippenham.

I am very pleased to note that arrangements have been made whereby up evening main-line trains are stopped at Ealing Broadway in air raids. This would certainly have been a great facility if it had been introduced a little earlier in the *blitz* period last year, and would have saved many passengers the necessarily slow journey under the *blitz* conditions to Paddington, and the even slower return to the Ealing District.

Yours faithfully,

T. J. ALDRIDGE

[The trains which stop at Ealing Broadway have been judged by the Great Western Railway as those most convenient to as many passengers as possible, without disturbing the speedy transit of the bulk of travellers to and from Paddington. Chippenham is not a station which is regarded as comparable in importance for the stopping of expresses with, for example, Bristol, Exeter, and Birmingham, and the number of passengers normally travelling to Chippenham would, in itself, barely justify the stopping of more main-line trains at Ealing Broadway. The 9.15 a.m. down train should be a very convenient one for business travellers to that Wiltshire town. In any event, our correspondent would almost certainly find it quicker and more convenient to travel from King's Cross to Paddington and there board the main-line train, than to take the tube to Ealing Broadway, which involves a change at Holborn and a long detour.—ED. *R.G.*]

The Railway Museum, Hull

The Municipal Museums, Hull
July 19

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The only municipal museum in the country devoted entirely to railway history was opened at Paragon station, Hull, on February 24, 1933, by Sir Charles Batho, a Director of the London & North Eastern Railway Company. A catalogue was prepared and issued relating to over 2,000 specimens in all, and this included models of various railway engines of various types; early types of trucks; a particularly fine collection of coats of arms from old railway coaches, many from railways now extinct; and early railway pottery, medals, passes, and so forth.

Unfortunately as a result of enemy action the entire collection has been burnt out and an effort is being made to get together a new one to take the place of the old, and promises of gifts of railway interest have already been made. It so happens that the present writer, the Director of the Museums at Hull, began life in the then North Eastern Railway offices at Hull, and while in different departments for many years was successful in securing quite a lot of early railway material which was placed in the museum.

Yours faithfully,

T. SHEPPARD,
Director

THE SCRAP HEAP

There were built in the United States, in 1890, about 6,344 miles of new railroad, giving an aggregate of 167,741 miles, or 44 per cent. of the total railway mileage of the globe.—*From the "Scientific American" of June*, 1891.

* * *

THE HOME RAIL INTERIMS

The Ministry of Wartime Transport, the Treasury, Paddington, Euston, King's Cross, Waterloo, old Uncle Tom Cobleigh and all have been in labour for a long time now. Today [July 25] they produced a mouse, although a more substantial progeny may follow shortly. Brokers, who are inclined to be prejudiced by the amount of turnover in Home Railway stocks, are by no means averse to the state of suspended animation in which the market now exists. There is, they argue, still "something to go for" while the new agreement remains wrapt in mystery. Polly Peacham was abjured to follow the same technique in her relations with Macheath, but succumbed to the latter's pleasing and teasing. Officialdom may be relied upon to do the teasing of the railway companies. Stockholders are more interested in what they hope will prove the pleasing part.—*From "The Financial News."*

* * *

While electricity may not yet be able to take the place of steam as an economical motive power for railway trains, it is demonstrating its ability, when properly managed, of cutting into the business of existing steam railways. The latest illustration of this is to be found in the passenger travel between St. Paul and Minneapolis. Until recently the steam railroads have controlled this business, but an electric road is now running between the two cities, connecting with the street lines of both, and in the half year which it has so far served the public it has taken such a large portion of the patronage from the steam railways that the latter will probably withdraw from competition for the local passenger traffic between the two cities.—*From the "Scientific American" of June*, 1891.

* * *

Canadian railways are generous in furnishing soap for the use of their passengers, and the individual cake is popular in sleeping cars and parlour cars. Naturally, the individual cake of soap is more than sufficient for one passenger's ablutions, and the porter deftly removes the used portion when the passenger turns from the wash basin. The soap immediately becomes salvage material. It goes into a container and at the end of the run it joins other cakes gathered in similar manner in other cars. In time, and as required, this soap is sent to car shops where the application of a steam jet will liquefy the mass and in this form it is used for washing down the interior of passenger equipment about to be replaced in service. Soap collected in this manner last year and again put to use at the car shops amounted to 1,796 lb. In another railway activity, namely, the hotels department, cakes of soap taken from guest rooms are gathered up by the maids and afterwards sent to the laundry for use there.

* * *

RAILWAY MEMORIES

The following Letter to the Editor, from Colonel E. Kitson Clark, appeared recently in the *Yorkshire Post*:—

"SIR,—A hundred years ago a young man arranged with a railway company to run a special train by which the teetotalers of Loughborough attended a meeting at Leicester.

"About the same time a young man using as his base the Brunswick Arms Tavern of Leeds obtained from a railway a train by which 1,700 persons connected with the Order of Ancient Foresters made a trip to Scarborough.

"Being their High Ranger, he was commended in that he made a profit of £32 for the funds of the Court—a truly Yorkshire commendation. It was later said by his colleagues: 'If he had not been a manufacturer he could have been famous as a travel and tourist agent.'

"As it was, James Kitson continued to manufacture, and may be found to have delivered engines in most parts of the world where Thomas Cook delivered travellers."

* * *

Mrs. Lillian Burbidge one of the wartime ticket collectors at Victoria station, Southern Railway, is back doing the same type of work as she did in the last war. Mrs. Burbidge comes from quite a famous Southern Railway family by the name of Peddlesden, as her father served for over 50 years in the company's service for which he received the S.R. 50 Years' Gold Medal. He was stationmaster at Uckfield in the last war and retired 10 years ago from a similar position at Littlehampton. In addition two of her sisters were booking clerks during the last war and her brother has been in the service for more than 25 years. As Miss Peddlesden, she was a ticket collector at Eastbourne for 2½ years from 1916.

* * *

EMBANKMENT HAY FOR FARMERS

The L.M.S.R. has announced the continuance of its wartime policy of allowing farmers to harvest hay crops growing on railway embankments. Last year approximately 440 farmers availed themselves of this offer; this year it is expected that this number will be increased substantially as every bit of grass is required for use as silage to feed cattle during next winter. Farmers wishing to harvest railway hay should apply to the nearest stationmaster.

* * *

"RETSIWT"

How many readers know what this means? A Southern Railway female ticket collector at Victoria did, and enabled her team to gain another point in the B.B.C. "Mystery Competition" which was broadcast for half an hour on Sunday, June 29, in a Male *v.* Female Railworkers Intelligence Competition. The Southern team was drawn from ticket collectors at Victoria while the L.M.S.R. team comprised a parcel foreman, a porter, and two female parcel porters from Euston.

* * *

"Hitler likes to run things to schedule," says a writer. Perhaps he didn't notice the NS* in the timetable when he started on his trip to Russia.

* Not Sundays.

From "Punch."

G.W.R. rail ticket issued in exchange for road ticket

G.W.R. "snack ticket" available for exchange at refreshment rooms

Front and back of return "countermark" ticket for passengers travelling on a party ticket, Paris-Orleans Railway. The back of the ticket is printed in German and Italian. Such tickets make it possible for all members of a group to enjoy the privileges they are granted collectively, thus affording them more individual liberty than if they had to travel always as a group

Exchange tickets and countermarks (four-fifths of full size) reproduced from "Passenger Tickets," by the late Professor Lionel Wiener

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

EGYPT

Reduction of Operating Costs ; Oil and Cotton-seed Cake as Fuel

In explaining the Government's transport policy, the Minister of Communications recently stated that the State Railways were confronted with a difficult problem, in that the Anglo-Egyptian treaty obligations necessitated a mobilisation of rolling stock, fuel, and staff. Nevertheless every effort was being made to keep down transport costs within the means of all classes of the population, and in this connection he mentioned that in some cases very high-priced coal was being replaced by oil fuel, for which a considerable number of locomotives had been converted and more were in course of conversion. Experiments were also being conducted with cotton-seed cake as a locomotive fuel. As export of this commodity was most difficult, and coal in sufficient quantity was almost unprocurable, these experiments were being watched with great interest.

Railway Budget Re-incorporated in State Budget

After six years' trial during which the railway finances have been separated from the general finances of the country—from 1933 to 1939—it has been decided to revert to the earlier policy, and the State Railways budget was re-incorporated in the State budget as from the fiscal year 1940-41.

ARGENTINA

National Railway Pension Law

After protracted delays, proposals for amending the above law, with a view to saving the fund from the insolvency which threatens to overtake it, have been submitted to Congress by the Ministry of Public Works. The proposed reforms follow more or less the lines foreshadowed in THE RAILWAY GAZETTE of June 20, but are in some respects even more sweeping. The message accompanying the Bill gives a detailed analysis of the position of the fund, and points out that after attaining a maximum of $(pesos) 404,611,817 in 1937, the capital account had, by December 31, 1940, dwindled to $373,192,000. It is also stated that the standing commitments in 1937 were estimated at $585,898,691, but by the end of 1940, this figure had risen to nearly 900,000,000 pesos. The proposals have yet to be discussed by Congress, where they will probably undergo modification, but it may be remarked that the proposed increase in the companies' contributions has evidently been framed without an appreciation of the grave financial situation of the railways, and although an increase in the tariffs is hinted at, there is no indication as to what this will be.

After the sending of the proposed reforms to Congress, a Decree issued by the Ministry of Public Works announced that no more pensions would be granted until the revised scheme had been discussed by Congress. By the same Decree the railways were forbidden to dismiss any employees on the grounds that they were eligible for their pensions. This has created dissatisfaction among the employees.

FREE CHINA

The Szechwan-Yunnan-Burma Line

The Suifu-Kunming Railway has now been surveyed in detail throughout and its length is stated to be 773 km. (480 miles). It will connect the Yangtze river in Szechwan Province with the capital of Yunnan, whence it continues westwards as the Yunnan-Burma Railway. The surveyed distance from Kunming to the Burma frontier at Hsuptap near Kunlong is reported to be 880 km. (547 miles). These two lines together are considered likely to be one of the most important rail routes in China, and freight rates from Suifu to Rangoon are expected to be able to compete favourably with the Yangtze route plus the long sea transit from Shanghai, for traffic to the West.

Possible Coal Supply for Burma

The railway runs through country rich in coal, the pithead cost of which is only $4 or about Rs. 3/5 a. (Rs. 3·3) a *tonne*, and it is hoped that this may compete with Indian coal in Burma, which costs about Rs. 25 to 30 a ton in that country. Construction work on the Yunnan—Burma line is, however, very difficult and involves many tunnels, one being 776 yd. in length. So far only about 100 miles of line east of Kunming are open for traffic, but it is hoped that a length of about 80 miles westwards from that city towards Burma will be opened by December if rails are received in time. Railhead will then be at Anning on the Burma Road.

The Kwangsi-Kweichow Railway

This line, the construction of which is being pushed forward rapidly, will connect Liuchow with Kweiyang, the capital of Kweichow Province; its length is estimated to be 620 km. (385 miles), but this figure would seem to include the proposed extension beyond Kweiyang to Chungking or at any rate to the Kweichow—Szechwan border. Work was begun in September, 1939, and material salvaged from invaded territory between Liuchow and Nanning and from the Hunan—Kweichow construction—work upon which has been temporarily suspended—is being used for the Liuchow—Kweiyang line. During the last two years Kweiyang has become an important centre due to a large population having settled there from the invaded coastal provinces.

The Chungking-Chengtu Railway

The first section of this important line, which will eventually connect the capital of Free China with the capital of Szechwan Province, has now been completed from Chungking to Neikiang, whence the connecting line to Suifu—for Yunnan and Burma—branches off south-westwards. The Suifu line is, in fact, to be given preference over the Neikiang—Chengtu section and constructed first. The total length of the Chungking—Chengtu line is 523 km. (325 miles), probably including the Suifu branch or the northern extension to the Kansu border towards Tienshui or both.

Extensions in the North-West

Construction is also proceeding on the Paochi—Tienshui extension of the Lung-Hai Railway, a distance of 165 km. (102½ miles). There are now 541 km. of the Lung-Hai line in operation in Free China, that is to say, west of Chengchow. At Tienshui the important link from Chengtu will meet the Lung-Hai system and be continued to Lanchow and the North-West.

MANCHUKUO

Parcels Services on the S.M.R.

The South Manchuria Railway is arranging to run a service of parcels trains between Dairen and Harbin, and Fusan and Mukden, and it is expected that some 5,000 parcels will be carried daily. For delivery of these parcels the International Transport Company is increasing its lorry services so that parcels loaded on the trains in the morning will be delivered to the consignees the same evening.

SWITZERLAND

Doubling the Zurich-Chur Line

Completion has at last taken place of the doubling of a section of the Zurich-Chur main line which has been in progress for more than ten years. In October, 1931, a second track was brought into use between Pfäffikon and Richterswil, and this has now been extended for 6·2 km. (3·9 miles) between Pfäffikon and Lachen.

SPAIN

Ojos Negros-Sagunto Railway

Traffic has been resumed on this narrow-gauge railway, which is owned by the proprietors of the Ojos Negros iron ore mines and used for the transport of the ore to the port of Sagunto, near Valencia, 204 km. (127 miles), where there are blast furnaces. The railway suffered severely during the civil war, when some 60 km. of track were removed and much rolling stock destroyed. The line runs nearly parallel to the broad-gauge Central Aragon Railway.

RAILWAY CONSTRUCTION IN THE U.S.S.R.

A note of the more important lines built in Europe and Asia during the last 23 years

By ***BRIAN REED***

RAILWAY construction in the U.S.S.R. since the beginning of the Soviet *régime* has been nothing like what one might be excused from imagining by the constant stream of propaganda. The route-length of line at the beginning of the 1914-1919 war was 58,500 km. (36,350 miles), but, as far as can be ascertained, the route-length now in operation is only 87,000 km. (54,000 miles), of which about 4,000 km. (2,500 miles) have been opened since the beginning of 1933. These figures relate to the U.S.S.R. proper, and do not include the 16,000-odd. km. (10,000 miles) of line in territories taken over since September, 1939.

Strategic Lines

In the first years of the new Government—say up till the beginning of the first Five-Year Plan in 1928—most of the important new lines were built for strategic reasons in the Ukraine and round Leningrad to enable better and quicker troop concentrations to be made along the western frontier. Among these were the Bielopole—Starodub—Polotsk, Chernigov—Gomel, and Zhlobin—Mozyr lines, the line from Petrograd to Novgorod, and the line connecting Petrograd with Krasni Khalm, in the Yaroslavl province, to the north of Moscow.

Then came important lines improving communications to, through, and in the Urals, the most important being the Gorki—Kotelnich, Arzamas—Kanash, Kazan—Sarapul—Sverdlovsk, and Troitsk—Kartali—Orsk—Chkalov lines, and also the Danilov—Bui cut-off north of Moscow on the Trans-Siberian express route. Other lines of this period included the improvement of communications from the Black Sea coast by the route from Kherson through Dniepropetrovsk to Kharkov, and the building of lines near Smolensk to improve coal transport between Kharkov and Leningrad.

The propaganda milestone of this period has always been the Turksib railway, opened in 1930, but this line, connecting Semipalatinsk, in Western Siberia, with the Tashkent railway at Arys, was conceived as long ago as 1878, and a map dated 1890 shows the route projected to be very similar to that actually adopted in construction.

Industrial Construction in Urals

It is the great industrial developments in the Urals (ferrous and cuprous metals), the Kussbass (coal and coking coal) and Kazakhstan (coal and many types of minerals) that has led to the construction of the most important lines in the last 10 or 12 years. The Troitsk—Orsk line, already mentioned, and its branch from Kartali to Magnitogorsk, in the heart of the Urals, was the first important line, and the immediate result was that the Cheliabinsk—Kurgan—Omsk—Novosibirsk section of the Trans-Siberian line had to be greatly improved, and a new cut-off line built between Novosibirsk and Leninsk-Kuznetsky, to facilitate the great interchange of traffic between the Urals and the Kussbass. To give some relief to the western portion of the line, a direct line was built from Sverdlovsk *via* Kamensk to Kurgan, and through passenger traffic and the district freight traffic was transferred to it.

Nevertheless, what was really wanted as the Magnitogorsk area developed still further, was a Ural—Kussbass route quite independent of all the Trans-Siberian routes, but this has not yet come to fruition. Indeed, it is only since the development of the Karaganda coal basin and the construction of a line to it from Kartali, that the idea has been pushed forward, and earthworks begun along the route from Akmolinsk (on the Kartali—Karaganda route) through Pavlodar and Barnaul. But if the Karaganda coal is suitable for the blast furnaces in the Urals, the chief industrial reason for a new through Ural—Kussbass route disappears. Nevertheless, it will form an independent Trans-Siberian route as far as the Kussbass outlet.

Alternative Routes in Siberia

Ever since the Magnitogorsk area began to be developed in real earnest in the days of Lenin, it has been obvious that one of the most urgent requirements was a direct route west out of the Magnitogorsk area for the iron products of the Urals, and map after map which has come of the U.S.S.R. in the last 12 to 15 years has shown a line projected from Magnitogorsk to Ufa. But the line has not yet been built, and the Troitsk—Orsk line and its westward extension to Chkalov, and the construction of the Uralsk—Iletsk line have all been due to the necessity of getting the iron products away to the west, and, in the case of the Uralsk—Iletsk line, to facilitate traffic in each direction between the Urals, Western Siberia, and Kazakhstan on the one hand, and the Caspian, Caucasus, and Donbass areas on the other.

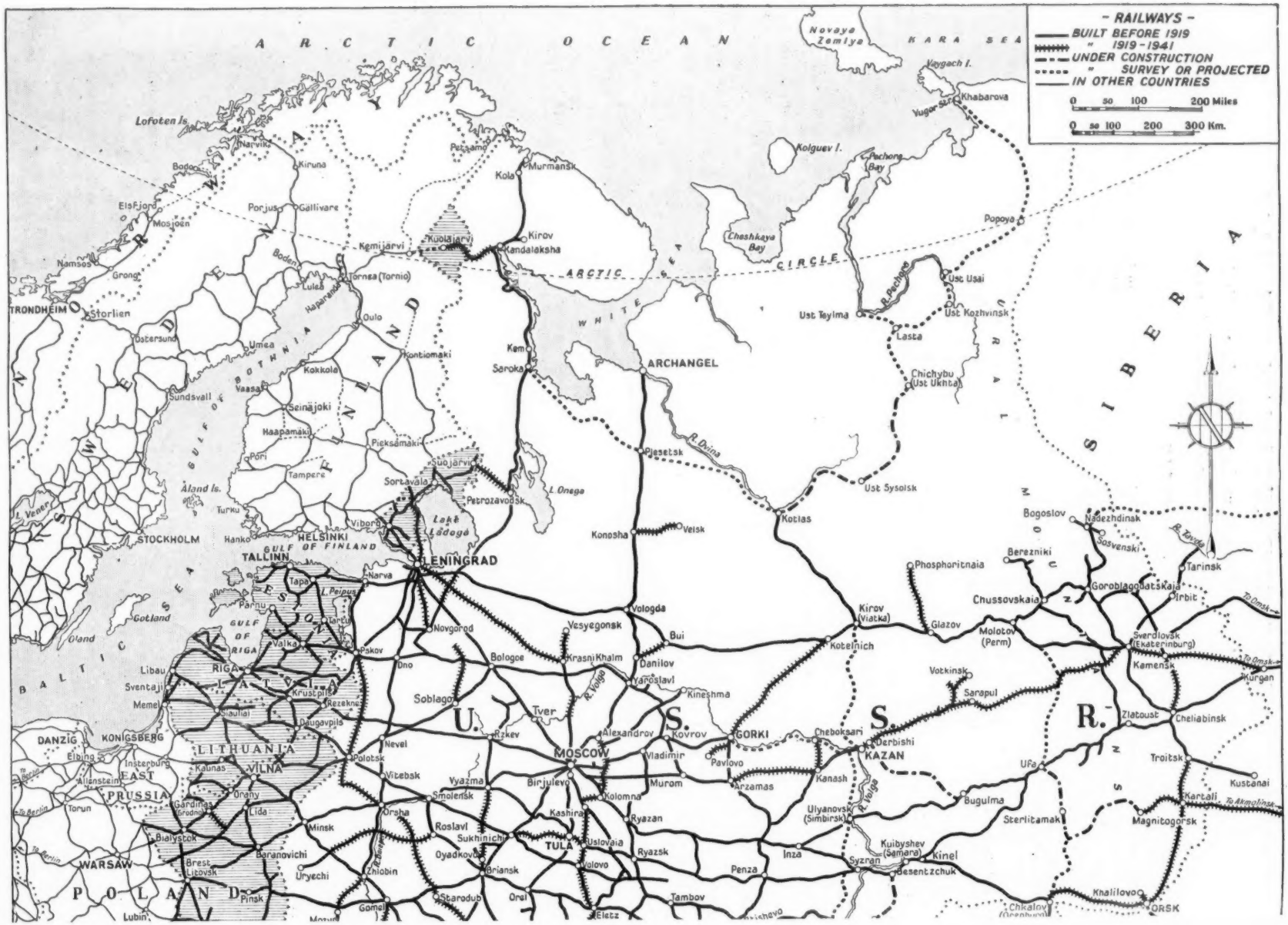
It was not until 1940 that the Kartali—Akmolinsk—Karaganda line was brought into operation, and it is being pushed southward rapidly to Lake Balkash and thence to a connection with the Turksib line near the River Chu. But since its projection, the coal workings in the Karsakpai area have been increased, and copper workings begun in Djezkazgan, and a line from that area to the Karaganda—Balkash line has just been opened. Surveys have been made with the object of forming this branch into a through lateral line connecting the Karaganda—Balkash and Chkalov—Kandagach—Tashkent railways. A further connecting line under construction in Kazakhstan, which is principally a coal and mineral (nickel and chromium) line, is that from Orsk to Kandagach, with an extension thence to the Caspian sea at Chapayev, the principal reason for which is probably to supplement the oil pipe line leading from the oil bearing region round Chapayev and Makat to the industrial area in the South Urals. The Chapayev—Kandagach line is understood to have been opened, and the track laid for 70 miles north of Kandagach.

Shorter lines, mainly for mineral traffic, opened in the last year or two, include one from Cheliabinsk to the centre of the aluminium industry at Kamensk; another from Rubzovka on the Barnaul—Semipalatinsk line, to the copper, cobalt, and other mineral deposits near Ust Kamenogorsk and Ridder; also the gradual southward extension of the Kussbass line from Stalinsk to Temir Tau, a similar extension of the Achinsk—Minusinsk line, and in the south-west various cut-off lines in the area round the basin between the Don and Dnieper rivers.

Coal Railways

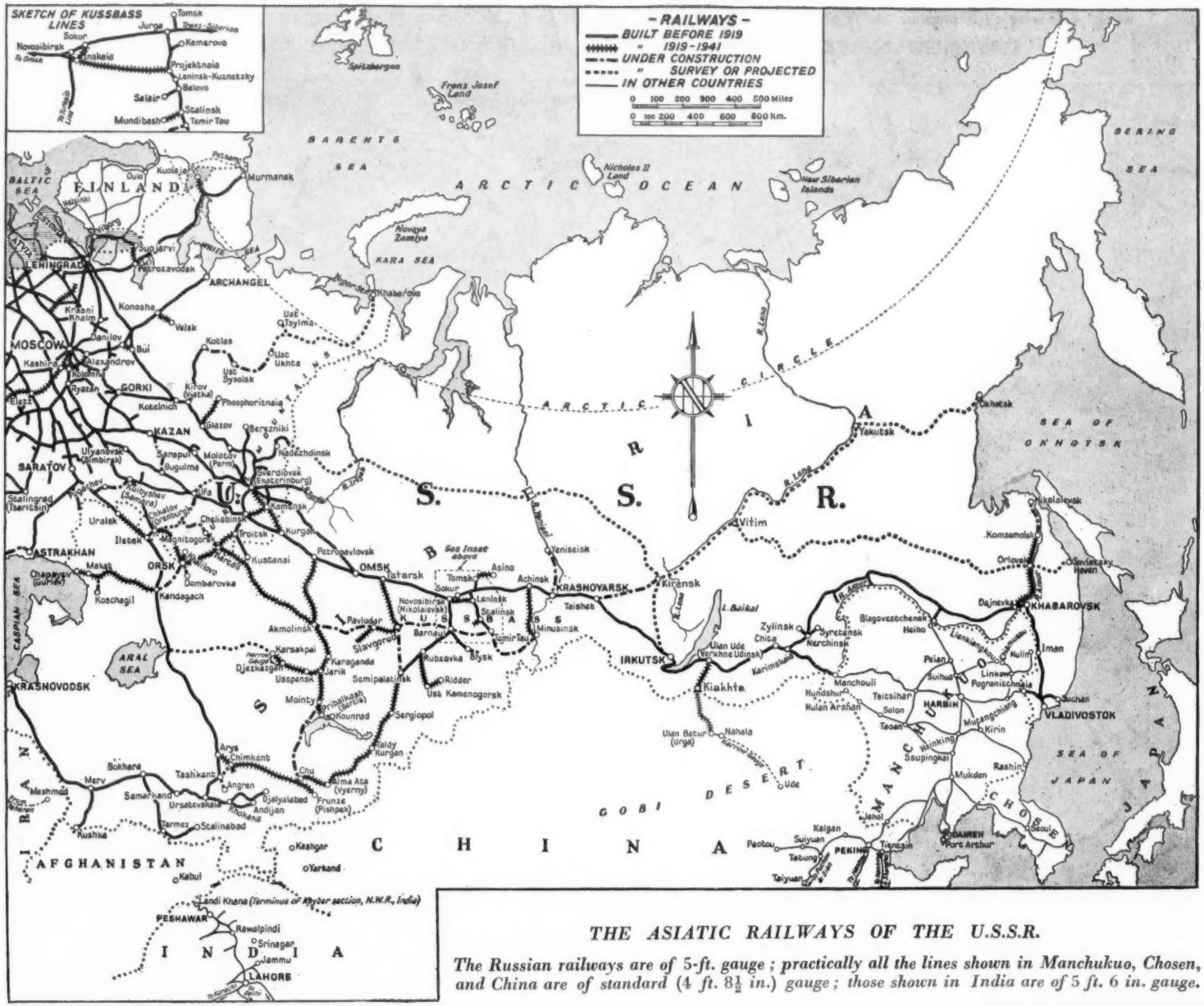
The network of lines in the Donbass coal area round Debalzevo and Lugansk has two principal outlets, the first north through Valuiki to Moscow and the second north-west through Krasni Liman to Kharkov, the Ukraine, and Leningrad. A third outlet, to Stalingrad and Saratov and Uralsk is not quite so important. It was the great traffic northwards in the Moscow direction that led to the construction of one of the best-known lines, the Moscow—Don direct coal line. This railway includes portions of old lines which were brought up to main-line standards, and lengths of entirely new line, particularly between Valuiki and Eletz. It was built as double track throughout, but a third track was laid later between Kashira and the environs of Moscow, and in the last year there have been reports that most of the line now has three tracks. It runs from Kondrashevskaja, a little to the east of Voroshilovgrad (Lugansk), to Valuiki at the north end of the coalfield, and thence by way of Kastornaia, Eletz, Volovo, and Kashira to Moscow; but from near Kashira it is in communication with the Moscow avoiding line, running east of the city *via* Zhilevo, Ilinski Pogost, and Orekhevo, to Alexandrov, a route which was

(*Continued on page* 111)


- RAILWAYS -
BUILT BEFORE 1919
" 1919-1941
UNDER CONSTRUCTION
" SURVEY OR PROJECTED
IN OTHER COUNTRIES
0 50 100 200 Miles
0 50 100 200 300 Km.
ARCTIC OCEAN
Novaya Zemlya
KARA SEA
Vaygach I.
Khabarova
Yugor Str.
Kolguev I.
Pechora Bay
Cheshkaya Bay
Popova
ARCTIC CIRCLE
WHITE SEA
Lofoten Is.
Narvik
Kiruna
Petsamo
Murmansk
Kola
Bodo
Porjus
Gallivare
Elsfjord
Mosjoen
Kemijarvi
Kuolajarvi
Kirov
Kandalaksha
Namsos
Grong
Boden
Lulea
Haparanda
Torneå (Tornio)
TRONDHEIM
Storlien
Ostersund
Umea
Oulo
Kontiomaki
Kem
Soroka
ARCHANGEL
Ust Usai
R. Pechora
Ust Teyma
Ust Kozhvinsk
Lasta
Chichybu (Ust Ukhta)
Kokkola
Vaasa
Seinäjoki
Haapamäki
Pieksämäki
Suojärvi
Sundsvall
Pori
Tampere
Åland Is.
Turku
Sortavala
Petrozavodsk
L. Onega
Pleseisk
R. Dvina
Ust Sysolsk
Kotlas
Konosha
Veisk
Viborg
Lake Ladoga
STOCKHOLM
Hanko
HELSINKI
GULF OF FINLAND
TALLINN
LENINGRAD
Bogoslov
Nadezhdinsk
Sosvenski
R. Tavda
Tarinsk
Berezniki
Phosphoritnaia
Chussovskaia
Gorobliagodatskaia
Pirbit
To Omsk
Tapa
Narva
Parnu
L. Peipus
Tartu
Gotland
Oland
Valka
Pskov
Novgorod
Vologda
Vesyegonsk
Bui
Kirov (Viatka)
Glazov
Kotelnich
Molotov (Perm)
Sverdlovsk (Ekaterinburg)
Kamensk
Kurgan
Votkinsk
Sarapul
Libau
RIGA
Sventaji
Krustpils
Rezekne
Dno
Bologoe
Krasni Khalm
Danilov
Yaroslavl
Kineshma
R. Volga
Memel
Siauliai
Daugavpils
Soblago
U.
Tver
S.
S.
R.
Zlatoust
Cheliabinsk
DANZIG
KONIGSBERG
Elbing
Insterburg
EAST PRUSSIA
LITHUANIA
Kaunas
VILNA
Nevel
Rzkev
Alexandrov
Kovrov
GORKI
Cheboksari
Derbishi
KAZAN
MOSCOW
Vladimir
Pavlovo
Ufa
Troitsk
Kustanai
Polotsk
Vitebsk
Vyazma
Birjulevo
Murom
Arzamas
Kanash
Kartali
To Atraglinsk
Smolensk
Kolomna
Ulyanovsk (Simbirsk)
Bugulma
Sterlitamak
Magnitogorsk
Orsha
Kashira
Ryazan
Roslavl
Sukhinichi
TULA
Uslovaia
Ryazsk
Inza
Kuibyshev (Samara)
Kinel
Syzran
Desentzchuk
Penza
Tambov
Orel
Briansk
Oyadkovo
Zhlobin
Uryechi
Baranovichi
Brest Litovsk
WARSAW
POLAND
Bialystok
Grodno
Lida
Minsk
Pinsk
Gomel
Lubin
Eletz
Chkalov
ORSK
Khalilovo

THE EUROPEAN RAILWAYS OF THE UNION OF SOVIET SOCIALIST REPUBLICS

Territories annexed by the U.S.S.R. since the outbreak of the present war in September, 1939, are hatched with horizontal lines. The Russian and Finnish railways are of 5-ft. gauge; practically all the other lines shown are of standard (4 ft. 8½ in.) gauge



THE ASIATIC RAILWAYS OF THE U.S.S.R.

The Russian railways are of 5-ft. gauge; practically all the lines shown in Manchukuo, Chosen, and China are of standard (4 ft. 8½ in.) gauge; those shown in India are of 5 ft. 6 in. gauge.

also built by reconstructing existing lines and building new connecting portions.

At its south end the Donbass—Moscow coal railway has a feeder tapping the pits round Debalzevo and Popovka, and running through Kupiansk to Valuiki. During the last year a connecting line to main-line standard has been built from Kupiansk to Krasni Liman, joining the main northern and north-western exits from the coalfield, and enabling coal from the Yama area to be sent with equal facility to the north or north-west. The direct coal line is nearly 650 miles long, made up of 185 miles from Kondrashevskaia to Valuiki, 390 miles thence to Kashira, and about 60 miles from there to Birjulevo, on the outskirts of Moscow. From the Donbass to Uslovaia the ruling grade is 1 in 180; but from Uslovaia to Kashira it is 1 in 110; and from Kashira into Moscow 1 in 86. The Moscow—Rostov passenger traffic does not go over the coal railway, but *via* Voronezh and Riazan. Originally the coal line was intended to go as far south as Nesvetajevo, close to Rostov, but as far as is known it has never been constructed south of the line running north-east from Debalzevo through Lugansk.

Other new construction shown on the accompanying maps are (*a*) the strategic railways into Finland from two points on the Murmansk line, and (*b*) still under construction, the long line connecting Kotlas, on the River Dvina, with the Pechora basin, tapping on the way an oil district and coal and mineral deposits. It is believed that this railway is being prolonged from the Pechora basin north-east to the Yugor Straits, passing through the Vorkuta coal area.

Far Eastern Construction

There remain to be mentioned the developments in the far east of the U.S.S.R., most notable of which has been the doubling of the Trans-Siberian line all the way from Cheliabinsk to Vladivostok. From Ulan Ude, east of Lake Baikal, a strategic line has been built southward to Ulan Batur (Urga), and a narrow-gauge extension is now being built across the Gobi desert to the frontier of Inner Mongolia somewhere near Ude.

From near Khabarovsk a line running down the Amur valley to Komsomolsk has been in operation for more than a year, and is being extended northwards to the mouth of the river close to Nikolaievsk, where a new port is being built; a branch is also being built east from this line to Sovietsky Haven.

It is the Komsomolsk (City of the Young Men) area which was to be the eastern end of the alternative Trans-Siberian route far to the north of the existing line, which was put in hand a few years ago. Surveys were made and portions of line constructed, but, with the Japanese menace taking a lower place in U.S.S.R. affairs, actual construction appears to have lagged. Yet it is interesting to note that within the last few months proposals have been made for another west to east line beginning at Nadezhdinsk—in the Urals north of Sverdlovsk—or thereabouts, and running over the Ob and Yenisei basins to join the existing Trans-Siberian line in the neighbourhood of Irkutsk.

Latest reports indicate that a long line is being built north from Krasnoyarsk, on the Trans-Siberian line, down the valley of the Yenisei, and another along the sea of Okhotsk towards the Kamschatka peninsula. This last must be quite an isolated line, as the railway from Komsomolsk to the mouth of the Amur is not finished, and this is the only other line within hundreds of miles, unless the proposed Taishet—Komsomolsk line has come to fruition.

Further proposals made for railway construction during the next 15 years by the planning section of the Commissariat of Transport during 1940, include two north to south lines, one from Kirov (on the northern route from Moscow to the Urals) through Kazan, Ulyanovsk, Syzran, and Saratov to Stalingrad, and the second from Molotov (Perm) to Chkalov *via* Ufa and the Magnitogorsk area. Both routes would make part use of existing railways.

Bridges

One of the most potent reasons for bad communications near large towns in the U.S.S.R. is the width of the rivers, which makes bridge construction a difficult and expensive matter. For years the principal route from Moscow to Cheliabinsk and Siberia was the southern one *via* Samara and Ufa, mainly because the bridge over the Volga at Syzran made the journey complete, whereas there was no bridge over that river at Kazan and, until there was, the prolongation of the line from Kazan to Sverdlovsk through Sarapul was hardly worth undertaking. Awkward bridge crossings over the Volga at Yaroslavl and over the Oka near Gorki have also prevented full use being made of the northern alternatives.

PRINCIPAL NEW LINES, 1919-1934

Bielopol—Starodub—Polotsk
Zhlobin—Mozyr
Gomel—Chernigov—Ichniaia
Vyazma—Oyadkovo
Leningrad—Novgorod
Leningrad—Krasni Khalm
Chudovo—Zvanka
Kherson—Dniepropetrovsk—Kharkov
Tuapse—Adler
Senaki—Sukhum
Minjeven—Karav
Gorki—Kotelnich
Arzamas—Kanash
Kazan—Sarapul—Sverdlovsk
Glazov—Phosphoritnaia
Danilov—Bui
Konosha—Velsk
Troitsk—Kartali—Orsk—Chkalov
Kartali—Magnitogorsk
Sverdlovsk—Kurgan
Petropavlovsk—Akmolinsk
Slavgorod—Pavlodar
Achinsk—Minusinsk
Novosibirsk—Leninsk Kuznetzky
Semipalatinsk—Alma Ata—Arys (Turksib line)

PRINCIPAL NEW LINES, 1935-1941

Kondrashevskaia—Valuiki—Kashira—Moscow (Donbass—Moscow direct coal railway)
Zhilevo—Ilinski Pogost—Alexandrov (Moscow Avoiding Line)
Kanash—Cheboksari
Krasni Liman—Kupiansk
Tula—Sukhinichi
Uralsk—Iletsk
Cheliabinsk—Sinarskaia—Kamensk
Orsk—Khalilovo
Rubzovka—Ust Kamenogorsk—Ridder
Kartali—Akmolinsk—Karaganda
Ulan Ude—Ulan Batur
Dejnevka—Komsomolsk
Petrozavodsk—Suojarvi (Finland)
Pinozero—Kuolajarvi (Finland)
Minjevan—Julfa
Tomsk—Asino
Kandagach—Chapayev
Karaganda—Pribalkash
Jarik—Usspensk—Djezkazgan—Karsakpai

PRINCIPAL LINES UNDER CONSTRUCTION, 1941

Kotlas—Ust Sysolsk—Chichybu (Ust Ukhta)—Pechora basin—Vorkuta—Yugor
Sovkoznaia (Bugulma)—Derbishi
Zolotonosha—Mironovka
Magnitogorsk—Ufa
Orsk—Kandagach
Orsk—Dombarovka
Akmolinsk—Pavlodar
Mointy—Chu
Pribalkash—Kounrad
Krasnoyarsk—Yeniseisk
Komsomolsk—Nikolaievsk
Orlovsk—Sovietsky Haven
Astrakhan—Kislaia (Caspian)
Adler—Sukhum (Caucasus)
Kant—Tokmak—Bystovka

PRINCIPAL LINES UNDER SURVEY OR PROJECTED, 1941

Taishet—Kirensk—Vitim—Burejastroi—Orlovsk (Far Eastern Siberia)
Karsakpai—Aral (on Iletsk—Tashkent line)
Slavgorod—Barnaul—Temir Tau—Minusinsk
Yakutsk —Okhotsk
Lena Valley—Kirensk-Arctic
Kazan—Gorki
Kirov—Kazan—Saratov—Stalingrad
Molotov—Ufa—Chkalov
Nadezhdinsk—Ob—Yenisei—Irkutsk

DOUBLE TRACK SECTIONS

Cheliabinsk—Novosibirsk—Irkutsk—Khabarovsk—Vladivostok
Cheliabinsk—Ufa—Samara—Syzran
Syzran—Penza—Rtishevo—Povorino—Liski—Valuiki.
Moscow—Tver—Leningrad
Moscow—Kashira—Eletz—Valuiki—Kondrashevskaia
Moscow—Ryazan—Ranenburg—Michurinsk—Tambov—Rtishevo—Saratov
Moscow—Alexandrov—Yaroslavl—Vologda—Konosha
Moscow—Kovrov—Gorki
Stalinsk (Kussbass)—Jurga (Trans-Siberian line)
Cheliabinsk—Troitsk—Kartali—Magnitogorsk
Molotov—Kirov
Sverdlovsk—Tumen
Kartali—Orsk
Moscow—Briansk
Osnova-Lgov (via Kharkov)
Orsk—Chkalov—Kinel (just east of Kuibyshev)
*Ryazan—Kozlov—Voronezh—Milerovo—Kamenskaia—Rostov
*Moscow—Podolsk—Tula—Orel—Kursk—Byelgorod—Kharkov—Krasni Liman—Bakhna—Taganrog
Debalzevo—Dniepropetrovsk
Kupiansk—Popasnaia
*Tula—Uslovaia
Moscow—Dmitrov

* Given under reserve

Similarly, the new line from Khabarovsk to Komsomolsk has been built along the west bank of the Amur river to save building a big bridge, but with its prolongation to the river mouth a new ocean-ship port has been put in hand at the terminus, although there is a town of some size—Nikolaievsk—at the mouth on the same bank. A similar position will be found at Astrakhan with the building of the new line from the river bank opposite that town along the western shore of the Caspian Sea to Kislaia, and possibly a physical connection at the north end will not be made for years.

The awkward working across the Volga and Oka is now in course of improvement by the construction of a new large railway bridge over the Volga at Yaroslavl, and another over the Oka near Gorki. Actually the new double-track bridge over the Volga forms part of a re-alignment to by-pass the town of Yaroslavl, through the centre of which the railway now runs, and will be four to five miles from the city. The approximate length of the bridge will be 2,100 ft. Other big bridges built in the last five years to gain full use of new or modernised main lines have been over the Volga at Saratov and Gorki, over the Oka at Kashira, over the Don at Rostov, and over the Ural at Uralsk.

SIXTH AVENUE SUBWAY, NEW YORK

A brief description of some of the many engineering problems solved in constructing this £6½ million-a-mile underground line

ON December 15 last one of the most costly underground lines in the world was opened for traffic. This is the 2¼-mile Sixth Avenue subway, New York, which cost approximately $60,000,000, and involved almost every known method of underground construction at different points along its length. The reason was the extraordinary variety and number of obstacles encountered in so short a distance.

This subway is an essential link in the IND Division of the New York transit system, formerly the Independent Subway System, and, running throughout under Sixth Avenue, connects the previously existing lines at 53rd Street and Christopher Street. It serves an important business, shopping, and theatre district centred upon Sixth Avenue, and during the rush hours carries a traffic the density of which is second to none. The completion of this line with its 7½ miles of track, brings the route-mileage of the IND Division up to 55·6 and its track mileage to 230·6; the totals for the whole subway and elevated lines in New York City are now 250·9 route-miles and 815·6 track-miles.

There are five stations on the new line, all with 660-ft. platforms, except at 34th Street, where one is 700 ft. and the other 800 ft. in length; at one other station there are side platforms, but at the remaining three they are of the island type. Though the present maximum train length is 10 cars, all stations can accommodate 11-car trains. Direct access is provided at the various stations to the B.M.T. and Hudson & Manhattan lines and to departmental stores and office buildings. Between 34th and 42nd Streets there is a 25-ft. pedestrian subway constructed over the subway roof under the centre of the avenue, with numerous entrances at the various side street junctions.

Some of the Obstacles Encountered

One of the first hindrances to the construction of this subway—which was planned to begin as long ago as 1928—was the fact that tunnel No. 1 of the N.Y. Water Supply system is built under Sixth Avenue for the major part of the distance covered by the new subway. Until tunnel No. 2 was completed in 1936, therefore, it was considered inadvisable to risk the safety of No. 1, which would be exposed to possible damage from the use of dynamite in the rock excavation for the new subway.

Methods used in the construction of the subway included compressed-air shield tunnelling, rock tunnelling at normal air pressure, and cut-and-cover construction. It is considered that this subway has had to be built through a more congested area than any other in New York, and its construction adjacent to another underground line in service over a distance of 1½ miles is unique; certainly no other line has had to cross over and under so many other existing underground lines.

The area traversed is also unusually congested with public service mains of every description, and some $5,000,000 was added to its cost of construction due to the fact that the subway was beneath the elevated railroad before the removal of the latter. No fewer than 670 columns supporting the elevated had to be jacked up, temporarily supported during construction, and finally transferred to and supported by the roof of the new subway. The majority of the Sixth Avenue buildings had to be underpinned or otherwise protected and six existing subway or railroad tunnels had to be either spanned over or tunnelled under.

In addition, it was necessary to cross under, support, reconstruct, and maintain the double-line Hudson & Manhattan Railroad all the way from 9th Street to 33rd Street, beneath the centre of the avenue. All this work had to be done without interrupting services or road traffic unduly and with the minimum interference with the activities of the shops, stores, and other properties adjacent.

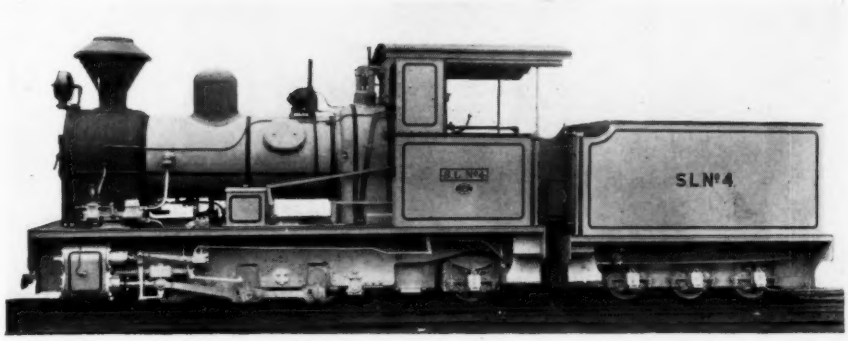
Yet another obstacle was the Catskill aqueduct running under Sixth Avenue from 53rd to 33rd Street, necessitating not only the greatest care in the use of explosives, but also limiting the quantity of excavation possible in advance of the completed subway structure, in order that too much of the rock cover over the aqueduct should not be removed before it was replaced by the steel and concrete of the subway. And, perhaps, worst of all, was the rock encountered, Manhattan schist, which was found at varying depths below the surface and with considerable differences in level between the two sides of the avenue. It was also " blocky," full of seams, badly faulted, and often disintegrated, necessitating the use of concrete retaining walls and heavy bracing to support the excavation sides and prevent slides.

The most difficult piece of construction was at the intersection—at an angle of 20 deg.—of Broadway with Sixth Avenue. Here the new subway had to be constructed immediately beneath the Broadway line of the B.M.T. subway, without interruption of the service. Moreover, the Hudson & Manhattan line had to be diverted, and beneath everything the Long Island and Pennsylvania Railroad tunnels pass at right angles under the new subway at almost the same spot. These, however, are only some of many complicated feats achieved by the construction engineers, the number and variety of which are too great to be recorded here.

Brief mention must, however, be made of the obstacles at 40th Street, namely 15 gas mains, 5 water mains—from 12 in. to 48 in. dia., 250 cables carried in 20 banks, a 16-in. steam main occupying a space of over 4 sq. ft., and 14 manholes, each 10 ft. square and from 8 ft. to 10 ft. deep. To restore all these within the limited space between the top of the subway roof and the street surface was no easy problem, and in solving it and numerous others the greatest credit is due to the engineers responsible for building this unique underground line.

A NEW PORTABLE " DAYLIGHTING " UNIT.—By reason of its portability and adaptability to vertical or horizontal positions, the new Ediswan Portalux lighting unit for 5-ft. 80W. fluorescent discharge tubes enables " daylight " readily to be brought up to any job in a workshop.

A BAGNALL LOCOMOTIVE FOR MALAYA



THE 0-6-2 tender locomotive we illustrate has recently been completed by W. G. Bagnall Limited, Stafford, for the Ulu Remis Estate, Malay Peninsula. Walschaerts motion is employed for operating piston valves working above the cylinders. Outside framing is used throughout for the engine and tender, in conjunction with flycranks for the coupling rods. The boiler has a raised firebox of the round-topped pattern, and two Ramsbottom type safety valves are mounted upon it. The water conditions met with called for the use of an elaborate boiler feeding arrangement. This comprises a Gresham & Craven No. 5 self-acting injector and two Worthington-Simpson duplex steam-driven feed pumps. The fuel of palm fibre and coconut shells necessitated special consideration in designing the firebox and firebars. Additional features of equipment include a spark-arresting chimney, a Dunbar & Slater mechanical lubricator with four feeds, and Stone's electric lighting. Special large head pin and link couplers are fitted.

The leading particulars are as follow:—

Gauge...	700 mm. (2 ft. 3½ in.
Cylinders, dia.	10 in.
Piston stroke	12 in.
Wheels, coupled, dia.	2 ft. 0 in.
,, bogie ,, ...	1 ft. 7 in.
Wheelbase, rigid	5 ft. 0 in.
,, total (engine)	10 ft. 8½ in.
Boiler, heating surface :—	
Tubes	238 sq. ft.
Firebox	49 sq. ft.
Total	287 sq. ft.
Grate area	10 sq. ft.
Working pressure	160 lb. per sq. in.

The tender has a tank capacity of 500 gal. of water and a fuel space of 120 cu. ft.; the wheels are 1 ft. 7 in. in diameter. In working order the engine weighs 15 tons and the tender 7½ tons, giving a total weight of 22½ tons. At 75 per cent. of the boiler pressure a tractive force of 6,000 lb. is exerted.

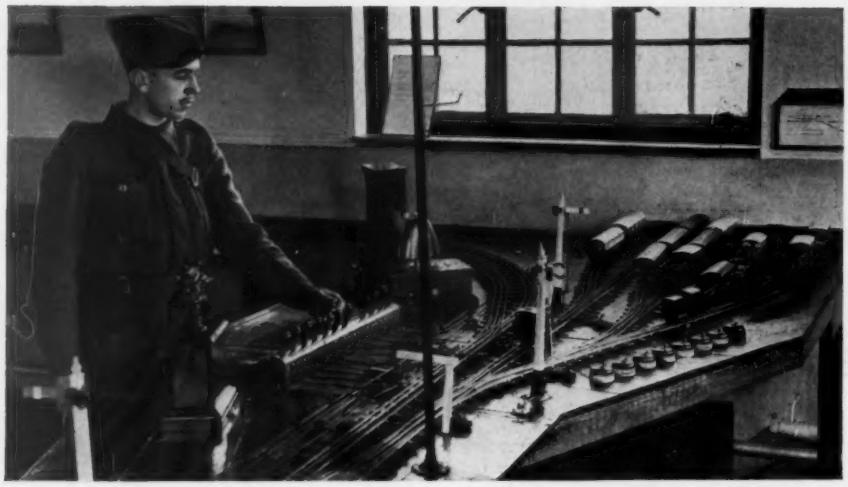
Mining Railway Picture of 1544

MR. T. H. SANDERS, the author of "Springs—A Miscellany," discovered some little time ago a picture which seems hitherto to have been overlooked, showing a mining railway of the sixteenth century, and we learn that he proposes to use this for the frontispiece of Volume II of his "Springs—A Miscellany." Meanwhile he has permitted us to reproduce it herewith. The original painting is entitled "Les Travaux de la Mine," is dated 1544, and is painted on a wood panel 22 in. by 42 in. According to M. Vanduyveld, Conservateur-en-Chef of the Royal Museum of Fine Arts in Brussels, this painting "renders perfectly the many workings of the mine and the treatment of precious material, gold in particular." The picture is evidently of the composite order and, in view of the absence of mountain mining in Brabant, it is not unlikely, in the view of Mr. Sanders, that the painter obtained his information from the scarce mining book, "Der Ursprung gemeynner," published about 1520, which contains the illustration reproduced by Mr. Charles E. Lee, in his series of articles* on "The Evolution of Railways." The complete painting which Mr. Sanders has discovered is executed with the minute attention to detail of the Flemish school of the period. The accompanying illustration shows the section of the main picture which depicts a miner pushing his four-wheel truck along a railway out of the tunnel mouth; this is certainly one of the best pictorial instances of an early railway. The artist, Lucas Gassel, was born in Dutch Brabant about 1500 and died around 1570. His work was executed chiefly in Brussels, and he specialised in pictures of contemporary economic life.

Mining railway depicted on a portion of a Flemish painting of 1544

* This illustration appeared at page 849 of THE RAILWAY GAZETTE of April 30, 1937. These articles were afterwards reprinted in book form, price 2s. 6d.

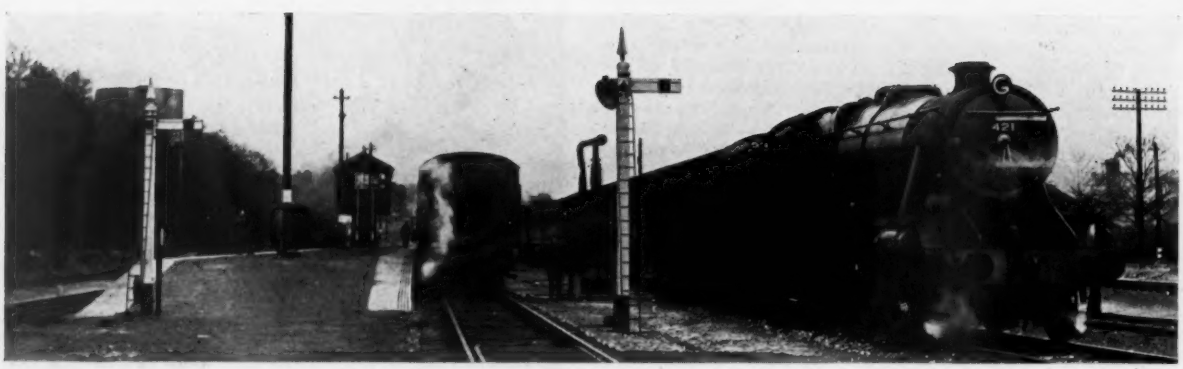
British Railways and the War—78



Some views taken at an army railway training centre in the Aldershot area where the Royal Engineers learn how to build, maintain, and operate their own railways, and also to take over the working of any civilian railways should necessity arise

Above: A goods siding on a miniature railway fully equipped with points, signals, and interlocking, as on a full-size railway

Right: Full-size block instruments controlling traffic on a miniature railway. The locomotives are moved by electric power



Railway station on a military railway used for instructional purposes. The locomotive in the foreground is one of the War Department standard L.M.S.R. 2-8-0 type of Stanier design

RAILWAY NEWS SECTION

PERSONAL

Mr. Brendan Bracken has been appointed Minister of Information in succession to Mr. Duff Cooper, who has held the office since May of last year.

CANADIAN NATIONAL RAILWAYS

Mr. Samuel James Hungerford, the President, has resigned this office, but will retain his position of Chairman of the board. The new President is Mr. R. C. Vaughan, former Vice-President. Mr. Hungerford has also resigned from his post as President of the Trans-Canada Air Lines. He is succeeded by Mr. H. J. Symington.

Mr. George Mills has been appointed a Director of the Eastern Counties Omnibus Co. Ltd., in place of the late Mr. H. H. Mauldin.

Mr. Frank Pannifer has been appointed Financial Secretary of the Transport & General Workers' Union, in succession to Mr. Stanley Hirst, who will retire next month on reaching the age of 65. Mr. Pannifer has been for many years Chief Clerk in the union's finance department.

The honour of Knighthood has been conferred by the King, by Letters Patent bearing date July 8, 1941, on Mr. J. E. M. Rowland, lately Chief Railway Commissioner, Burma.

We regret to record the death on July 18 of Mr. Edward Alfred Sims, late Traffic Manager and Chief Railway Commissioner-Designate of Burma Railways.

At an investiture held at Buckingham Palace on July 8, the King conferred the honour of Knighthood upon: Mr. James Callander, Director of Vickers-Armstrongs Limited; Mr. Edward Highton Hodgson, C.B., O.B.E.; and Mr. John Douglas Ritchie, M.C., General Manager, Port of London Authority.

Mr. W. M. Selvey, Wh.Sc., A.R.C.Sc., has been unanimously elected President of the Institute of Fuel in succession to Lt.-Colonel Sir John Greenly, K.C.M.G., C.B.E., as from October next.

At a meeting of the committee of the Fuel Luncheon Club, it was the unanimous desire of all present that Sir David Milne-Watson, Bart., LL.D., should be nominated as President of the club for the coming session in succession to Lt.-Colonel W. A. Bristow, who has occupied the chair for the past two years. Sir David has accepted the invitation and it is expected that he will begin his year of office in October next.

Mr. H. G. Kerry who, as recorded in our July 4 issue, has been appointed Divisional Locomotive Superintendent, Old Oak Common, Great Western Railway, entered the railway service as a premium apprentice at Swindon in 1909. After a period in the Testing House he went to the drawing office in 1913, and in 1924 was appointed to the Cardiff Valleys Locomotive Division. In 1927 he became Assistant to the Divisional Superintendent, and in 1936 transferred to Old Oak Common as

Mr. H. G. Kerry
Appointed Divisional Locomotive Superintendent, Old Oak Common, G.W.R.

Assistant Locomotive Carriage & Wagon Superintendent. Mr. Kerry became Assistant to Running Superintendent and Outdoor Assistant to the Chief Mechanical Engineer at Swindon in 1939. He joined the Royal Naval Air Service in August, 1914, and was transferred to the Royal Engineers in 1917. He saw service in Belgium, France, Dardanelles, Egypt, Mesopotamia, and India. He was demobilised with the rank of Captain and returned to the Drawing Office at Swindon in 1920. On the formation of the Air Training Corps in February of the present year, Mr. Kerry was appointed to command the Swindon Squadrons. Mr. Kerry is a native of Oxford and was at school with Lawrence of Arabia.

Mr. Arthur D. Foster and Mr. Arthur G. Hunt have been elected Directors of the Manx Electric Railway in succession to Mr. Ernest Remnant and Mr. A. W. Bolden, both of whom died in June. Mr. Arthur D. Foster has been Secretary of the company since 1920, when he succeeded Mr. Featherston. The secretaryship of the company is now being undertaken by the firm of Messrs. Featherston & Foster. Mr. A. G. Hunt has recently become Chairman of the Antofagasta (Chili) & Bolivia Railway Company in succession to the late Mr. A. W. Bolden.

Mr. A. G. Parker, who has just retired from the service of the London Passenger Transport Board, was yardmaster in the Underground railway depot at Golders Green for 20 years. When the tube was extended to Golders Green in 1907, he was on the inaugural train, which Mr. Lloyd George drove. Mr. Parker joined the London & North Western Railway when he was aged 12. He left in 1906 to become a driver on the Bakerloo line, and later he was promoted from foreman motorman to yardmaster.

Mr. Ernest Kilburn-Scott, Consulting Engineer, whose death at his London home on July 12 at the age of 73 was recorded briefly at page 65 of our July 18 issue, had intimate connections with South Leeds and was at one time prospective Parliamentary candidate in the Liberal interest. He was a nephew of the late Dr. William Scott, a well-known medical practitioner at Holbeck, and his mother was the eldest daughter of Mr. Richard Kilburn, whose textile machine business was established in Holbeck in 1810. Mr. Kilburn-Scott was educated at the Leeds Middle Class School and Yorkshire College and joined his grandfather's firm of Richard Kilburn & Sons, millwrights. He subsequently served with John Fowler & Co., Hunslet, before setting up in practice as a Consulting Engineer. In the latter capacity he carried out works in Norway and the U.S.A. Mr. Kilburn-Scott will also be remembered as an historian of engineering and other features of Yorkshire life. He wrote a history of the Leeds Middle Class School; arranged for the erection of a tablet to T. W. H. Crossland at his birthplace; organised a memorial to George Baxter of colour printing fame; and convened the committee which raised the memorial to Matthew Murray, the Leeds engineer who built the steam locomotives of 1812 for use on the Blenkinsop rack rail. Mr. Kilburn-Scott's best known railway historical work is the Matthew Murray Centenary Volume.

SPANISH RAILWAY APPOINTMENTS

Señor Gregorio Perez Conesa, who, as announced in our issue of June 13, has been appointed to the post of President of the Council of Administration of the Spanish National Railway System, has had a long and distinguished railway career. He entered the First

Government Inspection Division as a civil engineer in 1910, and was later charged with the construction of the Avila-Salamanca railway. He was inspecting engineer on the electrification of the Pajares incline, and afterwards Manager of the Betanzos-Ferrol railway. In 1934 Señor Perez Conesa was appointed Engineer-Director of the State-owned railways, until 1936, when he went to the Canary Islands as Director of Ports and Harbours, returning in 1939 to the post of Director-General of the Railway Department. Besides serving on many committees and commissions, he was President of the Northern Railway Joint Labour Tribunal, and was the reporter on regrouping and nationalisation proposals in the 1924 Railway Statute.

Señor Francisco Javier Marquina has been appointed by the Spanish Government to be the General Manager of the National System of Spanish Railways. Prior to the nationalisation of the broad gauge railways in Spain, Señor Marquina, who is a civil engineer, was Managing Director of the Northern of Spain Company.

Señor Manuel M. Arrillaga has been appointed Assistant General Manager of the National System of Spanish Railways. Señor Arrillaga, who is a civil engineer, was for many years in the service of the Madrid, Zaragoza & Alicante Railway Company, first as Traffic Superintendent and later as Assistant General Manager, until the incorporation of the railway in the National System.

Señor Federico de Reparaz has been appointed to the post of General Secretary to the council of administration of the National System of Spanish Railways. Señor Reparaz was Secretary to the Board of Directors of the Northern of Spain Railway Company from 1932 until the railway was taken over by the State on February 1 last. He is a civil engineer and also a doctor of laws.

Señor José de Aguinaga has been appointed Deputy Assistant General Manager of the National System of Spanish Railways. Señor de Aguinaga was the author and engineer of the Burgos-Catalayud railway scheme and became the Manager and Chairman of the Santander-Mediterraneo Railway.

Señor Faustino Perez Villamil has been appointed Divisional Manager of the Northern Zone of the National System of Spanish Railways. Sr. Perez Villamil is a civil engineer who was an Assistant to the Manager of the Northern Railway before it was acquired.

Señor Francisco Gimenez Ontiveros, senior engineer of the Fifth Railway Construction Division, has been appointed to the post of Assistant Chief Engineer of the same Division.

The death took place on July 6 of Dr. Joseph Ward, Chairman & Managing Director of Thomas W. Ward Limited, the well-known firm of scrap dealers, dismantlers, and shipbreakers, and Chairman of several subsidiary companies, including the Milford Haven Dock & Railway Company. Dr. Ward was also Chairman & Managing Director of the Ketton Portland Cement Co. Ltd., another Thos. W. Ward subsidiary.

M. Charles Pierre de May, a Belgian, for many years an official of the Canadian Pacific Railway in London, has bequeathed the residue of his estate—about £1,000—to the Chancellor of the Exchequer for the State benefit. His gift was "a token of gratitude for the hospitality extended to me."

Mr. D. M. Evans Bevan, of Porthcawl, has been appointed a Director of the London Midland & Scottish Railway Company. Mr. Bevan, who was High Sheriff of Brecon in 1929, has colliery interests in South Wales, and is a Director of Barclays Bank Limited and the Phœnix Assurance Company and is one of His Majesty's Development Commission.

Mr. William E. Navin, General Freight Agent, Rutland Railroad, has been appointed Receiver of the undertaking in succession to Mr. L. G. Morphy, who has been appointed District Engineer, New York Central Railroad.

We regret to record the death in Johannesburg at the age of 58 of Senator A. P. J. Fourie, who was for a period Minister of Railways & Harbours in the South African Government.

Mr. Charles M. Chumley, District Engineer, Memphis, Tenn., Illinois Central Railroad, was appointed Engineer, Maintenance of Way, Chicago, on June 1, in succession to Mr. Lewis H. Bond, who has retired on account of ill-health.

Mr. Harry L. Sheffield, Assistant Freight Traffic Manager, New York, New Haven & Hartford Railroad, has been appointed Freight Traffic Manager in succession to Mr. Frank P. Kinney, who has retired after more than 45 years of railway service.

Mr. Robert J. Herring has been appointed Treasurer of the Denver & Rio Grande Western Railroad.

Dr. Henry Selby Hele-Shaw, Emeritus Professor of Engineering at Liverpool University, and a Past President of the Institution of Mechanical Engineers, who died on January 30, left estate valued at £26,727 (net £25,338). After numerous bequests, he left the residue of his estate, on the death of his wife and daughter, as to one half to the Benevolent Institution of the Mechanical Engineers and one half between the R.S.P.C.A. and the N.S.P.C.C.

L.M.S.R. Staff Changes

Mr. H. Bassett, Goods Agent, Nottingham, to be Goods Agent, Birmingham (Lawley Street), *vice* the late Mr. W. A. Norris.

Mr. W. Hubbard, Goods Agent, Darwen, to be Goods Agent, Nelson, *vice* Mr. G. Anderton, who has retired.

Mr. W. Marshall, District Assistant (Outdoor Machinery Services), Chief Mechanical Engineer's & Electrical Engineer's Department, Crewe, to be District Assistant (Outdoor Machinery Services), C.M.E. & E.E. Department, Manchester.

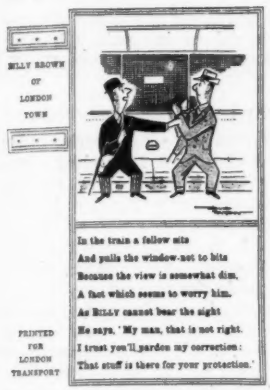
Mr. W. M. Chambers, District Assistant (Outdoor Machinery Services), Manchester, to be District Assistant (Outdoor Machinery Services), Crewe.

Left: Sir Thomas Royden, Chairman, L.M.S.R., and Mrs. Somerville-Smith, representative of the British American Corps, with one of three motor ambulances subscribed for by American railway employees (see page 118). *Right: Mr. J. M. Eddy, Chairman, B.A.G.S., and the Lord Mayor of London with a mobile canteen presented by the non-British staff in Argentina of the Buenos Ayres Great Southern, Western, and Midland Railway Companies for use in Great Britain* (see page 94, "*The Railway Gazette*," *July* 25, 1941)

TRANSPORT SERVICES AND THE WAR—100

Week-end train services of the L.M.S.R. and the G.W.R.—Curtailed Irish train services—The South African railways and the war—Transport developments in the Balkans, the Near East, and the Far East

On Saturdays from July 19 to August 30 inclusive, as well as on Friday, August 1, the 10.25 a.m. express from Euston is running in three sections. The first, at 10.25 a.m., is a restaurant car train from Carlisle and Windermere, running at its usual times. The second, at 11 a.m., is for North Wales, reaches Llandudno at 5 p.m. and Bangor at 6.24 p.m., with a restaurant car to Chester. The third, at 11.35 a.m., is for Blackpool and Barrow, reached at 5.2 and 6.33 p.m. respectively, and has a restaurant car to Blackpool Central. The 11.35 a.m. express is booked non-stop over the 194 miles from Euston to Wigan in 4 hr. 7 min.



London Transport has revived the popular Billy Brown of London Town to rebuke persons who meddle with the anti-splinter netting on the windows of Underground trains. The advertisement appeared in every London daily and evening paper

GREAT WESTERN RAILWAY

Special Announcement

Commencing on Saturday, July 26th, and on each Saturday until August 30th, the following additional trains will be run from Paddington:

9.35 a.m. and **2.15 p.m.** for the Weymouth line, Taunton, Minehead and Barnstaple branches.

12 noon for the Torquay line.

3.30 p.m. for the Weymouth line, Taunton, Exeter, Teignmouth, Newton Abbot, Torquay line and Plymouth.

JAMES MILNE,
Paddington Station, W.2. *General Manager*

Newspaper announcement issued by the Great Western Railway on July 23

The action of the G.W.R. in introducing on July 26 special Saturday trains formed the subject of the newspaper announcement reproduced above. We refer to the matter editorially at page 103.

Passenger Trains on the Yealmpton Branch

The passenger service on the G.W.R. branch to Yealmpton was withdrawn on July 7, 1930; Billacombe and Brixton Road stations were closed to all traffic. To relieve bus congestion, a service of one workmen's train every weekday morning was introduced on Monday, July 21, between Yealmpton and Saltash, calling at Steer Point, Brixton Road, Elburton Cross, Billacombe, Plymstock, North Road, Devonport, Keyham, and St. Budeaux. In the evening there is a return train from Keyham. It is possible that a full passenger service will be introduced shortly.

Curtailed Irish Train Services

The curtailment of services on the Great Southern Railways of Ireland from July 13, referred to briefly in the July 18 issue of THE RAILWAY GAZETTE proves to be very severe. On the Dublin—Cork main line the 8.20 a.m. and 5 p.m. expresses are withdrawn from Kingsbridge to Limerick, service being provided instead by the 7.15 a.m. mail, which leaves at 7 a.m., and the 6.30 p.m. express, leaving at 5 p.m. The 7 a.m. down calls at all stations from Limerick Junction to Mallow, and is decelerated 37 min., reaching Cork at 11.10 a.m.; the 5 p.m. down takes 4 hr. 40 min. to Cork, a slowing of 40 min. In the up direction the 7.45 a.m. from Cork is combined with the 9.20 a.m. from Limerick, and reaches Dublin at 1.10 p.m., a deceleration of 80 min.; the up mail, at 4.5 p.m. from Cork, is due in Kingsbridge at 8 instead of 7.40 p.m. All the local service between Kingsbridge and Kildare is withdrawn, and also the express boat service between Cork, Mallow, Waterford, and Rosslare Harbour. On the Midland Great Western section the three daily services in each direction between Westland Row and Galway are reduced to two, the 2.30 p.m. from Dublin and the 3.30 p.m. from Galway being withdrawn; the 7.10 a.m. Westland Row starts at 8 a.m., and runs 50 min. later, and the 8.45 a.m. and 7.55 p.m. from Galway run 60 min. later and 70 min. earlier respectively. On the Dublin & South Eastern section the through Dublin—Wexford—Waterford services are similarly reduced to two each way daily, calling at all stations and greatly decelerated. Many branch and local trains, and all restaurant and buffet car services on the Great Southern Railways have been withdrawn.

The Invasion of Ireland

"Ireland and its railways, in relation to war, demand some special consideration. The invasion of that part of the kingdom now would not be attempted on some wild and rocky shore, as in old times at Bantry Bay or Killala. The descent would more probably take place in the mouth of the Shannon, at Waterford, Sligo Bay, Lough Foyle, or Belfast Lough, or in Galway Bay, which is within little more than 100 miles of Dublin, the intermediate line, if afterwards held as a military communication, cutting the island right in two. . . . Some of the lines are single tracked for considerable lengths; all are of one common gauge of 5 ft. 3 in. The traffic both of goods and passengers is small. There is almost no coal or mineral traffic, and hence the rolling stocks and haulage power possessed by nearly all the lines are small, and the supply of waggons especially defective for meeting any great and sudden demand. The passenger carriages do not afford any material increase of capacity, though larger than ours. . . . The country is not rich, it has few great centres of wealth, population, artisan skill, or of buildings of a character and magnitude useful for military purposes dotted over the country. Timber in balks or plank of fit character for improvising railway bridge or other works of restoration or of a temporary character are not to be found in any quantity except at the points of import. The goods sheds are few, small, and often ill provided. . . . For these and other reasons, while the distances along these trunk lines are considerable, and, therefore, their use important, whether to invader or defender, the service must prove limited and difficult beyond anything likely in Great Britain. . . . The gauge being different from our British one, no help in the way of rolling stock could be given, even were there time for it, by the transport by sea of rolling stock from this side of the channel. For all military purposes in meeting invasion, then, the Irish railway system must stand or fall upon its own capabilities, and under any circumstances, but especially should the invader be welcomed by the inhabitants, the railways would be probably of more value to him than to ourselves, unless we had such length of notice beforehand, and such knowledge of the invader's intentions, as would enable us to remove all the rolling stock from the ends of the trunk lines he should first reach, and to breach those portions of the lines themselves. On the whole, the railway system of Ireland could not afford, at the best, anything like the same powerful aid, in rapidly meeting and

crushing an invader, that properly belongs to our British railways if rightly 'schooled' beforehand, so as to be handled to the best at the supreme moment."—*From "Our Railway System Viewed In Reference To Invasion," by Robert Mallet, published in* 1871.

The Fleet Air Arm

The Royal Naval Air Service of the last war was merged with the Royal Flying Corps to become the Royal Air Force on April 1, 1918. The Fleet Air Arm was formed in April, 1924, as a part of the R.A.F., and was under the operational control of the Admiralty only when afloat. The Fleet Air Arm comprised all aircraft carried on ships of the Royal Navy, but for the 14 years until 1937 it remained under the administrative control of the Air Ministry, and continued to be part of the R.A.F. In 1937 the Government decided to transfer the whole control of the Fleet Air Arm to the Royal Navy. The transfer did not take place at once, but on May 24, 1939, the administrative as well as the operational control was assumed by the Admiralty.

Military Camps in U.S.A.

The report of the Nashville, Chattanooga & St. Louis Railway for 1940 mentions that the construction of various military camps throughout the south-east will greatly stimulate passenger traffic, and the railway's traffic officers look for a substantial increase this year.

Train Ferries in War

The United States Navy is reported to have purchased the sea-going train ferries *Seatrain New Jersey* and *Seatrain Texas*, fine ships of rather more than 8,000 tons each. They were completed only last year, and were the latest development of the train ferries which have aroused so much interest in technical circles during the past few years. It is announced that they will be used as aeroplane transports, which is yet another wartime use for the train ferry type. The British authorities used train ferries extensively during the war of 1914-19 in their original function, maintaining the steady stream of munitions from Richborough, but for the greater part of that struggle the Germans use as mine-layers the large train ferries which normally ran to Sweden. For coastal work, where the high speed of a packet steamer was not really necessary, they were regarded as almost ideal. The open stern, with its wide low counter, was excellent for dropping, while the big train decks permitted a large number of mines to be carried, nicely accessible for adjustment and examination, and it was necessary to lay only one extra rail alongside each of the existing rails to have the ship completely equipped. These vessels were used extensively for laying the defensive minefields.

American Ambulances Presented to L.M.S.R.

Three motor ambulances, dedicated by the employees of the Central Railroad of New Jersey and the Reading Railroad to the London Midland & Scottish Railway Company in recognition of that company's gesture of friendship towards the United States in sending the Coronation Scot on a goodwill tour of America in 1939-1940, and also as a tribute to the way in which the British railwaymen have maintained essential services during enemy air attacks, were handed over to the British-American Ambulance Corps on July 24. The ceremony took place at Euston station, and the vehicles were formally handed over by Sir Thomas Royden, Chairman of the L.M.S.R., to Mrs. Somerville-Smith, the representative in this country of the British-American Ambulance Corps. Brief reference to this ceremony was made in THE RAILWAY GAZETTE of July 25.

Sir Thomas Royden, in making the presentation, referred to the great appreciation of the action of American railwaymen which was felt in this country, and expressed the view that an action of this kind was probably unique since it was made by a body of American railwaymen who had never met their British counterparts, with the exception of the driver and firemen of the Coronation Scot, who were present at the ceremony. Mrs. Somerville-Smith, in receiving the ambulances on behalf of the British-American Ambulance Corps, spoke of her long association and deep interest in railways, and Colonel W. Stewart-Roddi, who is visiting this country on behalf of the British-American Ambulance Corps, referred to the deep and practical sympathy he had found in many parts of the United States for the British people in the present conflict. The ambulances are to be located in densely populated areas served by the L.M.S.R., where they will be used for railway personnel as well as for the general community. The ambulances are well-equipped, powerful, streamlined vehicles bearing the inscription "From the employees of the Central Railroad, New Jersey."

C.P.S. in South Africa

Many thousands of persons recently attended a display in Cape Town by the Civilian Protective Services and personnel of the demonstration war train. It was the largest C.P.S. rally held in Cape Town and the units, which were drawn from all over the Peninsula, gave a spirited display of fire-fighting methods; the disposal of incendiary bombs; and other C.P.S. work. Many railwaymen are C.P.S. workers in South Africa.

South African Railways and the War

No fewer than 1,027 special trains were run during 1940 on behalf of the Department of Defence, 607 purely for the conveyance of troops. These figures do not, of course, include the train services introduced as a regular feature for soldiers travelling between military camps and the larger towns in their vicinity, such as between Zonderwater and Pretoria and between Potchefstroom and Johannesburg. In addition, arrangements were made for the conveyance of thousands of smaller military parties by ordinary trains and of thousands of trucks containing military material by scheduled trains. During December, 1940, when civilian passenger traffic was at its peak because of the incidence of the general excursion and school holiday periods, special Christmas leave was granted to large numbers of troops, and no fewer than 62,000 military concession tickets were issued. These tickets all covered return journeys and therefore involved altogether 124,000 journeys to and from all parts of the country.

In order to give soldiers a measure of relief in the matter of rail fares when travelling at their own expense, specially low concessionary fares, based on one half of the excursion fares for return journeys (or one half of the suburban or interurban local return fares were applicable, if cheaper), were granted by the administration with effect from March 9, 1940, to soldiers on leave travelling in uniform from and to military depots or camps at which they were stationed.

Throughout 1940 increasingly heavy orders for munitions and general war equipment were executed in the S.A.R. & H. administration's workshops for the Defence Department, practically all branches of the shops combining the production of such material with their normal maintenance and construction work. At coastal centres a great deal of work was also done for the Naval and Seaward Defence authorities. The manufacture of much of this equipment called for a considerably higher degree of accuracy than is usually required in the railway workshops, but the staff concerned and equipment available proved equal to the occasion, and some very exacting demands were met with a modicum of training or practice. In many cases a tremendous amount of preliminary work was necessary in connection with the making of jigs and tools, and difficulties in the manufacture of some articles arose as a result of a lack of certain materials. All were overcome, however, and the administration was thus able to assist the country's war effort to a very great extent.

New Railway Opened in Bulgaria

The complete line between Karnobat and Shumen (Sumen), linking north-eastern Bulgaria with the Sofia-Burgas railway line was recently opened for traffic. This single track standard-gauge line branches off at Shumen (on the main line Sofia-Varna, 71 miles to the west of the port) and runs in a southerly direction, *via* Asparuhovo and Kazilik, to Karnobat where the Sofia-Plovdiv-Burgas main line is joined. Karnobat is 38½ miles west of Burgas. The length of the whole line is 46½ miles. The last section to be completed was that between

Asparuhovo and Kazilik where the line crosses a difficult mountain range, negotiating the Calukavak saddle at a height of 1,320 ft. The new railway forms the easternmost of the three links across the Bulgarian central mountain range from north to south; the other two (from west to east) are the Sofia to Mezdra section of the Sofia-Varna main line, and the Stara Zagora to Gorna Orehovitza line.

Air Raids on Moscow

Moscow has now been added to the large number of European capital cities subjected to German air raiding. The first took place on the night of July 21-22. It is understood that a few stations on the Moscow underground railway have been adopted for use as air raid shelters, but the underground train services continue to function normally.

German-Russian Transit Arrangements

Although the German invasion of Russia brought to an abrupt close railway transit across the demarcation line agreed between the two countries after the occupation of Poland, the following information concerning the organisation of German-Soviet traffic through frontier points is of interest as indicating that all the main railways in Russian-occupied Poland had been converted to the Russian gauge of 5 ft. before the outbreak of the present hostilities in that area. The frontier stations, from north to south, were as follows:—

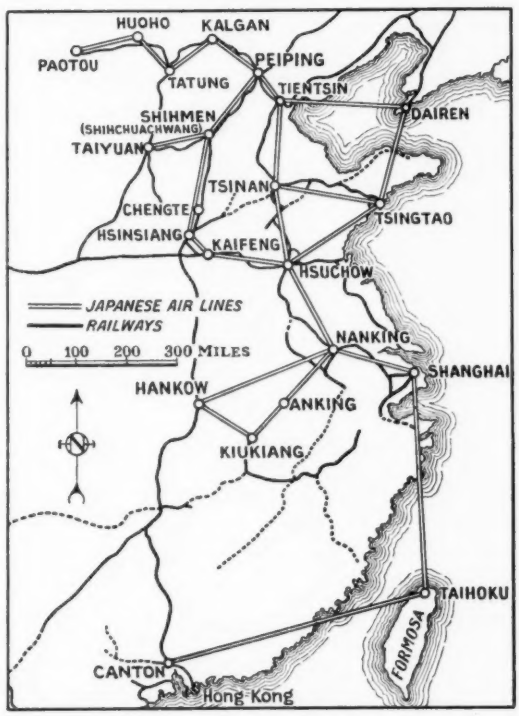
German frontier station	Russian frontier station	Notes
Deutsch-Krottingen	Kretinga	(*a*)
Laugszargen	Taurage...	(*b*)
Eydtkau	Virbalis	(*c*)
Szczapki	Augustow	(*d*)
Prostken	Grajewo	(*e*)
Malkinia	Tshishov	(*f*)
Platerow	Semyatitchi	(*g*)
Malaszewice and Terespol	Brest-Litovsk	(*h*)
Belzec	Rava Ruskaya	(*i*)
Zurowica and Deutsch Przemysl	Rus. Przemysl	(*k*)

(*a*) Both places are on the Baltic coast to the north of Memel, Deutsch Krottingen on the German side of the frontier, Kretinga on the Lithuanian (Soviet) side.
(*b*) Laugszargen is north of Tilsit, Taurage (known also under the German designation of Tauroggen) is in Lithuania; the line is the Tilsit-Radviliskis-Daugavpils railway. The Russian name of Daugavpils is Dvinsk, the German name Dünaburg.
(*c*) The old German-Lithuanian frontier stations on the Königsberg-Insterburg-Kaunas line; Eydtkau was formerly known as Eydtkunen.
(*d*) On the Reuss-Suwalki-Grodno line.
(*e*) The former German-Polish frontier stations on the Konigsberg-Bialystok line.
(*f*) On the Warsaw-Bialystok-Moscow main line; Malkinia is 58 miles to the north-east of Warsaw. The Polish name for Tshishov is Czyzew.
(*g*) On the Warsaw-Siedlce-Czeremcha-Wolkowysk line. Semyatitchi (Polish name Siemiatycze) lies 36 miles to the east of Siedlce.
(*h*) On the Warsaw-Siedlce-Lukow-Brest Litovsk and Chelm-Brest Litovsk lines respectively. Brest Litovsk (Polish name Brzesc) is 133 miles east of Warsaw.
(*i*) Rava Ruskaya is 41 miles to the north-east of Lwow (Lemberg); its Polish name is Rawaruska.
(*k*) On the Kraków-Lwów line; the Russian station is 60 miles west of Lwów.

The Laugszargen-Taurage crossing was reopened only in March, 1941, and three of the frontier crossings (Deutsch-Krottingen to Kretinga, Szczapki to Augustow, and Belzec to Rava Ruskaya) are understood to have been not yet actually opened for regular traffic at the time of the German invasion into that section of territory. Between the respective frontier stations the lines were laid on both the European (4 ft. 8½ in.) and Russian (5 ft.) gauges. Transference of goods destined for the Soviet side took place at the Soviet station, and that of goods for the German side at the German station. Direct passenger, luggage, and express goods traffic was reopened on October 6, 1940, between Berlin, Warsaw, Malkinia, Tshishow, Bialystok, Minsk, and Moscow, as well as on the northern line between Berlin, Königsberg, Tilsit, Laugszargen, Taurage, Radviliškis, Daugavpils, Bigosowo, and Moscow. Earlier reference to German-Russian through-traffic was made at page 627 of our December 13, 1940, issue.

Civil Aviation in Japanese-Occupied China

Prior to the Japanese invasion of China, there were various aviation companies established in part with foreign capital, in different parts of the country. At that time the Huitung Aviation Company, organised with a combination of Japanese and Chinese capital, operated only in the neighbourhood of Peking. When Japan attacked China, the Japanese forces advanced into the interior where there were no railways, or, if there were any, these had been severely damaged. The roads were in so bad a condition that the use of motorcars was out of question. In the circumstances, airways were the only means left for traffic connecting the different points, and the Huitung Aviation Company was asked to provide essential transport by air. As the Japanese troops reached further into the interior, the wider became the areas to be connected, so that the existence of an extensive network of air lines behind the front became an urgent necessity. Accordingly, the China Airways Company was established in December, 1938, with a capital of six million yuan. In April, 1939, the new company began its business, and the routes then undertaken were Peking—Tatung and Peking—Shanghai. In September of the same year the capital was increased to fifty million yuan and the head office



was moved to Nanking; there were branches at Peking and Shanghai, and transport offices at Peking, Kalgan, Shanghai, and Canton, and sub-branches at important junctions along the routes. The following air routes are now maintained:—

Those based on Peking, namely, Peking—Paotow, Peking—Kaifeng, Peking—Dairen, Peking—Shanghai, Tsingtao—Tayuan, and Tsingtao—Kaifeng.

Those based on Shanghai, namely, Shanghai—Dairen, Shanghai—Hankow, Shanghai—Nanking, Nanking—Hankow, and Shanghai—Canton.

Today aircraft of the China Airways Company make the trip between Shanghai and Hankow in 6 hr. The China Airways Company, in conjunction with the Dai-Nippon Airways Company and the Manchurian Airways Company, are playing an important part in maintaining transport on the Japanese-occupied mainland of East Asia. Further reference to these undertakings was made at page 262 of our March 7 issue.

The Railways of Syria

The convention which ended hostilities in Syria and Lebanon, and provided for the Allied Forces occupying Syro-Lebanese territory, included a provision (No. 13) that all public services, including railways and tramways, were to be maintained in operation and handed over intact to the Allied Forces. It was reported on July 19 that rail communication between Aleppo and Damascus had been restored, and on July 23 that some railway services between Turkey and Syria had been resumed.

Eire Tribunal of Inquiry into Public Transport

Reports by a majority and minority of members

This tribunal was set up by the Eire Government on December 22, 1938, and its majority and minority reports were completed in August, 1939, before the outbreak of war, and therefore, take no cognisance of difficulties which have arisen since that time. Criticisms of the delay in publication of the reports have been made from time to time in the Dail, and it was only on July 19 that the reports were made available to the public. The terms of reference included the examination of the position of public transport (other than air transport), circumstances contributing to the unfavourable financial position of the Great Southern and other railways, and measures necessary to secure efficient public transport. Advice on the necessity for fresh legislation or changes in ownership and administration of existing transport undertakings was also requested. Members of the tribunal, nominated by the then Minister for Industry & Commerce, were: Messrs. Joseph Ingram (Chairman), James P. Beddy, Henry Kennedy, John P. O'Brien, and Diarmid O. hEigceartuigh, with Mr. John O'Brien (Transport & Marine Section, Department of Industry & Commerce) as Secretary. Evidence was taken from 127 bodies and persons, and the examination of witnesses took almost four months.

Signatories of the majority report (Messrs. Ingram, Beddy, O'Brien, and O. hEigceartuigh) recommend the constitution of a National Transport Council, consisting of a small number of persons with special qualifications, for the review of all forms of public transport for five years. As to the Great Southern Railways they recommend the replacement for five years of the existing board of seven part-time directors (operating through a general manager) by a board of two part-time directors (elected by the shareholders) with a whole-time chairman nominated by the Government. This board should be assisted by two controllers (whole-time officers) appointed by the board on the chairman's nomination. Although not actually members of the board the controllers would participate in all its proceedings. As to the appointment of the chairman and controllers, it is recommended that one should have wide administrative and commercial experience, another be specially qualified to deal with finance and statistics, and the third should be a man with technical experience of transport engineering. The present postal voting scheme for the election of directors should be abolished. Unless financial facilities were placed at the company's disposal it could not have an opportunity of showing its commercial possibilities under the altered conditions visualised in the majority report. It is recommended, therefore, that the Government should guarantee principal and interest of a further issue by the company of £1,250,000 4 per cent. debenture stock. This sum was fixed after scaling down the company's request for £2,000,000, and would provide additional capital to acquire interests of licensed hauliers, extend existing road services, establish new services on the discontinuance of branch lines, and provide additional working capital.

The framers of the majority report rejected a proposal to restrict the use of privately-operated motor vehicles to a radius of 15 miles from the principal place of business of their owners. They considered that the required adjustment could best be made by the imposition of additional duties on motor vehicles other than those operated by statutory transport organisations. The acquisition by the Great Southern Railways Company of the licences of existing public hauliers was also recommended. To prevent uneconomic competition between the services of the Dublin United Transport Company and the railway companies in the Dublin area, a pooling arrangement is recommended.

The money received from additional motor vehicle duties, which were intended to protect the interests of the Great Southern and Great Northern Railways and other statutory transport undertakings, should be paid into a special fund. If in any of the next five years the net income of the Great Southern Railways Company was insufficient to meet its debenture interest the Government should guarantee payment of such interest by transferring to the company from the special fund the amount required to meet such deficiency.

The Great Southern Railways Company's proposal to close 41 branch lines, totalling 861¾ miles, is accepted in a general sense, but more careful examination of factors affecting each of these branches is necessary. The Londonderry & Lough Swilly Railway Company should be empowered to redeem, out of its own resources, the £10,000 capital represented by baronially-guaranteed shares. In any legislation arising from the report, the Government should reserve the power to guarantee an issue of debentures by the company to cover sums required for the extension of road services as a result of the closing of the Burtonport Extension.

In the minority report, Dr. Henry Kennedy disagrees with the principal recommendations of the majority report and advocates State ownership of the Great Southern Railways. Regarding the abandonment of branch lines he states that the Great Northern Railway Company claimed that the use of diesel trains and railcars had enabled it to continue certain branch line services. He considered that the Great Northern Company's difficulties could be solved only by agreement between the Governments of Eire and Northern Ireland. He recommended a subsidy to that company.

Contracts and Tenders

MESSRS. SANDBERG

The trustees of the late Mr. C. Peter Sandberg, C.B.E., have arranged to carry on the business of Messrs. Sandberg under the management of Mr. A. J. W. Graham, O.B.E., with the assistance of Mr. J. F. Sandberg.

More details of the large quantities of rails, rolling stock, and other railway materials, purchased in the U.S.A. as an outcome of Brazil's new policy of railway development, referred to in THE RAILWAY GAZETTE of February 7, are now available. Contracts have been placed as follow:—

United States Steel Export Company.—18,260 tons of rails and accessories at a cost of $47.50 a ton, f.a.s. Baltimore; payment over five years.

Baldwin Locomotive Works and American Locomotive Sales Corporation.—26 locomotives; 5 costing $55,365, 18 costing $52,050, and 3 costing $65,500, f.a.s. New York; payment in 48 months.

American Car & Foundry Company and Pullman Standard Car Export Corporation for the following supplies:—

150	30-ton closed wagons at	$2,843 each.
150	30-ton platform wagons at	$2,368 each.
150	30-ton open wagons at	$2,798 each.
150	Bogey sets for 20-ton wagons at	$1,121 each.
8	30-ton tank wagons at	$4,095 each (5,000 gallons capacity).

f.a.s. Baltimore or New York; payment in 48 months.

General Electric Company.—Five motor sets and equipment for the construction of locomotives in the Central Railway shops in Brazil at a total cost of $141,375, cash, f.a.s. New York.

Union Switch & Signal Company.—Centralised traffic-control equipment destined for the Barra do Pirahy—Entre Rios and Entre Rios—Santos Dumont sections of the Central Railway at a total cost of $850,000, payable $200,000 within 90 days after delivery, and the remainder over a period of five years.

Tenders have been sought for the construction of an addition to the plant of the Montreal Locomotive Works, at Longue Pointe, near Montreal, to cost about $30,000. A building about 92 ft. by 100 ft., on reinforced concrete foundations, with structural steel construction, is specified. Completion is to be late in the summer.

RAILWAY AND OTHER MEETINGS

The Great Western of Brazil Railway Co. Ltd.

The annual general meeting of the Great Western of Brazil Railway Co. Ltd. was held at River Plate House, London, E.C.2, on July 30. Mr. W. M. Codrington, Chairman of the company, presided. The Secretary, Mr. F. O. Ellis, having read the notice convening the meeting.

The Chairman said that the only item in the accounts which called for comment was the placing of £30,000 to income tax teserve. In 1939 the company made profits liable for income tax amounting to £95,203, on which the duty payable was £40,461. As the company had no income tax reserve, it was necessary to provide for this by charging three-quarters in the 1940 accounts.

The balance of trade between this country and Brazil had not provided a sufficient surplus of sterling to enable the Director of Exchange to grant the company more than a small part of its requirements; and of the cash balances shown in the accounts, some £170,000 represented milreis held in Brazil waiting to be remitted. The company was in the unfortunate position of having earned its debenture interest for the years 1939 and 1940, yet was unable to overtake any arrears of interest payments owing to lack of sufficient remittances. The position this year had somewhat improved.

Since the Anglo-Brazilian Trading Agreement of June, 1940, which regulated payments between the two countries, the milreis had been fixed at Rs. 80$050 to the £. With the remittance tax, this was equal to 2·85d. Such a rate did not enable the company to make a profit sufficient to provide the share capital with any remuneration at all, and it was only with a succession of good crops that it would be able to continue earning the debenture interest. Should the value of the milreis rise in terms of sterling, the position of the company would show a considerable improvement.

Heavy floods had caused damage to the northern and southern lines, with a consequent loss of traffic and additional expense in repair works. Further, the excessive rainfall had brought about a curtailment of firewood supplies, and the company had been obliged to draw heavily on its reserve stocks of coal. The additional cost of fuel thus utilised amounted to no less than £27,000.

The Brazilian Government had granted, as one of the terms of the revision of the company's contract, a loan of 40,000 contos for the improvement of the railway. Substantial progress had been achieved in carrying out the programme, in spite of delays and difficulties in obtaining equipment. A considerable number of items had already been delivered from this country and the U.S.A. Among them were 40 cane wagons, an electric welding plant for the repair of carriage and wagon tyres, three water-softening plants, an installation for crushing stone ballast, and 5,000 tons of rails and accessories (sufficient for 96 km. of track), as well as many essential spares and replacements.

The crossing of the River Parahyba at Cobé had been a source of anxiety since 1924, when the old bridge had been destroyed by heavy floods. One of the first fruits of the Government loan scheme had been the construction of a new bridge in ferro-concrete, 260 metres in length, which was opened to traffic on June 11 last.

The extension of the line on the central and southern sections had continued. In accordance with the contract, 28 new wagons were received in November last year, and a further 60 wagons, as well as three 2-8-2 locomotives, were on order by the Government.

The board desired to express its appreciation of the excellent work done by its colleague in Rio, Mr. Gudin, and by Drs. Lins and Baptista, representatives in that city. To Dr. Leão, the General Manager, had fallen perhaps the most difficult task; for besides his many exacting duties, he had had to inaugurate the programme of improvements now in hand. Special allusion had to be made to the work of the London office during the past year. Three of Mr. Ellis's assistants had been in the Army ever since the outbreak of the war. Only three weeks ago the sudden death of Mr. C. T. Burns had robbed the company of its faithful accountant.

The report and accounts were adopted.

STAFF AND LABOUR MATTERS

N.U.R. Annual Conference

Among the more important questions dealt with at the annual conference of the National Union of Railwaymen were co-ordination of transport, fire watching, and the Essential Work Order. Details of the resolutions adopted are given below:—

CO-ORDINATION OF TRANSPORT

The following resolution was carried unanimously:—

"This conference deplores the fact that the Government has failed to prepare and submit plans for the complete co-ordination of all forms of transport, including shipping, under public ownership and control. We are definitely of the opinion that it is only by such a system that we can successfully maintain our war effort, and we again declare that successful reconstruction after the war will depend as much upon a sound and economic transport system as upon any other factor. We demand that the Government should speedily consider the necessity for an immediate co-ordinated system of all forms of transport under which full representation of the trade unions concerned should be afforded. We feel that only by the inclusion of the organised workers can an efficient transport system be maintained and the maximum war effort be achieved."

FIRE WATCHING

A resolution deprecating the making of the Fire Prevention Order without consultation with the Trade Unions, expressing dissatisfaction with the scale of expenses paid to fire watchers, and pledging support for the withdrawal or amendment of the Order, was defeated, and the following amendment carried:—

"This conference strongly deprecates the action of the Minister of Home Security in making the Fire Prevention (Business Premises) Order No. 69 without, in the first place, consulting the representatives of organised labour. We consider it is the duty of the owners of industry to accept the responsibility of fire watching and we are opposed to the compulsory nature of the regulation. We note with satisfaction the efforts of the Trades Union Congress and pledge ourselves to support their efforts to obtain the withdrawal of this Order."

ESSENTIAL WORK ORDER

The following resolution was carried:—

"This annual general meeting agrees in principle with the Essential Work (General Provisions) Order No. 302, subject to the adaptation and modification as provided for by Section 9 so that the following provisions shall be incorporated:—

(1) That nothing in the Order shall contravene, in its relation to the working of the railways and the staffs, the existing agreements between the parties concerning machinery for negotiations of salaries, wages, hours of duty and other conditions of service.

(2) That nothing in the Order shall affect or vary in any way the procedure agreed between the parties for dealing with cases of discipline.

(3) That the existing right of the employees to leave the service on attaining the appropriate retiring age in accordance with the present practice, or the rules of the superannuation or pension fund, of which they are members, shall not be interfered with by the operation of this Order;

and also subject to agreement being reached for the establishment of a minimum wage of £3 per week excluding war bonus."

The conference was held at Swansea during the fortnight beginning on July 7.

Railway Interim Dividends, January-June, 1941

On July 25 the directors of the four main-line railway companies and the London Passenger Transport Board announced their decisions as to the dividend and interest payments to be made in respect of the first six months of the current year.

In every case the directors state that the Government has intimated its desire to amend the existing agreement covering the financial arrangements arising out of the Government control of the undertakings, but no details have yet been received. In the circumstances, the net revenue for the first half of the year is not at present ascertainable. The remainder of the statements were as follow:

GREAT WESTERN RAILWAY: "The directors of the Great Western Railway Company have declared an interim dividend of £1 10s. per cent. for the half-year ended June 30 last on the consolidated ordinary stock. The dividend warrants will be posted on or about the 19th proximo."

LONDON MIDLAND & SCOTTISH RAILWAY COMPANY: "At the meeting of the board of the London Midland & Scottish Railway Company it was decided to make interim dividend payments on August 20 on the 4 per cent. guaranteed and preference stocks, and on the 4 per cent. preference (1923) stock at £2 per cent., actual, less income tax at 10s. in the £."

LONDON & NORTH EASTERN RAILWAY COMPANY: "At the meeting of the board of the London & North Eastern Railway Company interim dividends for the past half-year at the following rates were declared: 2 per cent. actual for the half-year on the 4 per cent. first guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. second guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. first preference stock; 2½ per cent. actual for the half-year on the 5 per cent. redeemable preference stock, 1955; in each case less income tax at 10s. in the £. The warrants for these dividends will be posted on August 14. Consideration of payment of dividends upon other stocks has been deferred until the accounts for the whole year are available."

SOUTHERN RAILWAY COMPANY: "The directors are of opinion that the net revenue accruing to the company for the first half of the year is sufficient to pay (less income tax at the rate of 10s. in the £) interim dividends of 2½ per cent. on the guaranteed preference and preference stocks and 2½ per cent. on the preferred ordinary stock, and such interim dividends will be paid accordingly. An interim dividend of 2½ per cent. was paid on the preferred ordinary stock last year. The warrants will be posted on August 19 to those proprietors whose names were registered in the books of the company on July 5, on which date the balances were struck."

LONDON PASSENGER TRANSPORT BOARD: "The board proposes to make a payment on account of interest on the London Transport 'C' stock for the financial year ending on December 31, 1941, at the same rate as that paid on August 23, 1940, on account of interest for the year ended on December 31, 1940, namely, at the rate of ¾ per cent. actual, less income tax at 10s. in the £. Payment will be made by the board's registrars, the Bank of England, on August 22, 1941, to all holders of London Transport 'C' stock whose names are registered or inscribed in the books of the Bank of England at the close of business on July 29, 1941."

Notes and News

Thomas Cook & Son Ltd.—It is announced that the British railways have been parties to conversations, and provided certain difficulties can be overcome the railways may eventually acquire a controlling interest in the business of Thomas Cook & Son Ltd. The shares of Thomas Cook & Son Ltd. are owned by the Wagons-Lits Company and vested, under the Defence of the Realm Act and Regulations, in the Custodian of Enemy Property. If the deal matures the control of Thomas Cook & Son Ltd., which passed to the Wagon-Lits Company in 1928, will again return to British ownership.

Stockholders and Railway Dividends.—The British Railway Stockholders Union has issued a statement to the effect that the interim dividends on British railway stock meant that the Government guarantee still functioned and that the 850,000 stockholdings were assured of a modest, but certain, return for the duration of the war. During the half-year the companies had been working practically to capacity. Whatever might be the political justification for the time lag between costs and revenue-producing charges, the injustice to stockholders, it is declared, was manifest, and no doubt would be taken into account when the railway agreement was revised. Railway stockholders had in no sense abandoned the safeguard of the standard revenue which was included in the Railway Act of 1921. The standard revenue would be earned if special factors were not permitted to interfere, and stockholders looked for recognition of this fact when their position in relation to the Government was finally regularised.

Control of Photography.—In response to various enquiries, we have secured an authoritative ruling to the effect that permits for photographing and sketching prohibited objects cannot be granted to private individuals for private records, even though their integrity and loyalty are above suspicion. Commercial photographers, or photographers on the staffs of engineering or other constructional firms, may be granted general permits for a period of months, but in other cases a permit is necessary for every separate occasion on which a photograph or sketch is required to provide technical records, to support claims for compensation, and for legal proceedings.

Institute of Transport Examination Question Papers.—The questions set at the Institute of Transport examinations in 1941 have been reprinted and may be obtained on application to 15, Savoy Street, W.C.2, price 6d. (7d. post free) a set.

Compagnia Italiana Turismo (C.I.T. England) Limited. — Mr. David Howat Allan, of 70, St. Helen's Place, Bishopsgate, London, E.C.3, has been appointed liquidator of this company.

Italian Railway Accident.—As the result of a collision on July 20 between a passenger train conveying Italian workers to Germany and a projection from a passing goods train on a viaduct near Como, 30 persons are said to have lost their lives.

Institute of Transport Subscriptions, 1941-42.—The reduction of the graduate and student subscriptions from £1 1s. to 10s. 6d. is to be extended to the year beginning on October 1, 1941. Further, the subscriptions of associate members by examination are reduced from £2 2s. to £1 1s. for the same year.

French Railway Loan.—Vichy reports state that the 4 per cent. loan of the Société Nationale des Chemins de fer Français was fully subscribed. The total amount authorised was 4,000,000,000 French francs. The loan was offered at 95 per cent. making the return just over £4 4s. per cent.

Brentwood Accident, L.N.E.R.; Inquest Concluded.—The Coroner at Brentwood, Essex, on July 23, recorded a verdict of accidental death in the case of the seven persons killed in the collision near there on the L.N.E.R. on February 10, when the 10.4 a.m. train, Liverpool Street to Southend, ran into the rear of the 10 a.m. express to Norwich, which had stopped owing to loss of steam.

Great Southern Railways (Eire).—For the 27th week of 1941 the Great Southern Railways Company reports passenger receipts of £46,373 (against £39,962), and goods receipts of £47,598 (against £45,734), making a total of £93,971 (against £85,696) for the corresponding period of the previous year; The aggregate receipts to date are passenger, £1,013,240 (against £871,097).

goods £1,342,542 (against £1,209,202); making a total of £2,355,782 (against £2,080,299).

Swedish Railway Abandonment.—The Nättraby-Alnaryd-Almeboda Railway, near Karlskrona, Sweden, formerly worked 49 km. (30 miles) of 0·60 metre gauge line with 4 locomotives, 6 carriages, and 57 wagons. Part of this railway has now been abandoned and the only portion remaining is the 12 km. (7½ miles) between Nättra Harbour and Berg, which is open for goods traffic only. Freight trains are operated as required, without a regular timetable. The name of the company remains unaltered for the present. Two locomotives and 21 goods wagons are still in use.

Questions in Parliament

Winter Strain on Railways

Major-General Sir Alfred Knox (Wycombe—C.), on July, 15, asked the Secretary for Mines whether, in order to lessen the strain on the railways in the coming winter, consumers with sufficient storage accommodation would be allowed now to purchase coal up to the quantity consumed last year.

Mr. D. R. Grenfell (Secretary for Mines) replied that he was fully alive to the need for reducing the winter strain on our transport and for that reason had consistently pressed, this year as last year, for the maximum possible dispersal of coal stocks over the country during the summer months. But we were short of coal this year, and if essential war production was to be maintained, household supplies must be cut down. To permit those consumers with ample storage accommodation to lay down stocks equivalent to their last year's consumption, must result in others having to go short next winter.

Through Booking Facilities

Mr. L. Silkin (Peckham—Lab.), on July 16, asked the Parliamentary Secretary to the Ministry of War Transport whether he had considered the London Passenger Transport Board's application to him for authority to withdraw, as from July 1 last, existing through booking facilities between certain road points on the bus, tramcar, and trolleybus services of the board, and a number of underground stations; and whether, seeing that the withdrawal of these facilities was equivalent to an increase in charges to the travelling public, he would refuse permission.

Colonel J. J. Llewellin: Through season tickets are not affected by these proposals. They apply to ordinary single through bookings, but these are only available at relatively few points. The proposed withdrawal will ease the work of conductors, many of whom are now inexperienced, and will not, I think, cause any real hardship.

Mr. Silkin asked the Parliamentary Secretary if he was aware that a considerable number of passengers used these facilities daily and that the result of withdrawing them would mean increased charges.

Colonel Llewellin replied that he had gone into the matter. The increased revenue likely to be secured from this source over a whole year was only £6,000 out of the takings of some £40,000,000 of the L.P.T.B.

Modification of Railway Agreement

Mr. L. Silkin (Peckham—Lab.), on July 16, asked the Parliamentary Secretary to the Ministry of War Transport whether the terms of the railway agreement had now been settled and agreed; and whether he would cause the terms to be made available to the public.

Colonel J. J. Llewellin: No, Sir. When the terms of the modified agreement have been settled a statement will be made to the House.

Mr. Silkin: Is the Parliamentary Secretary aware that these negotiations have been going on for nearly two years? Is it not time that an agreement was concluded?

Colonel Llewellin: That is not quite accurate. There was one agreement, but in virtue of the Government's decision not to allow an increase of railway fares and freight rates, a modified agreement has now become necessary. Negotiations have not been going on for two years.

Mr. Silkin: There never has been a final agreement. Is it not time that the country knew the terms on which they have taken over the railways?

Mr. F. C. Watkins (Hackney Central—Lab.): Will the Parliamentary Secretary take into consideration the urgent necessity, in order to promote the war effort, of co-ordinating road and rail transport under a single national authority?

Colonel Llewellin: That, of course, is quite a different matter.

Train Refreshments

Mr. A. Denville (Newcastle-upon-Tyne Central—C.), on July 17, asked the Parliamentary Secretary to the Ministry of War Transport why the payment of service charges by soldiers on trains was supported by his department, on the ground that it was right that the men serving on the trains should get some form of gratuity; and if he could state what wages were paid to these attendants.

Colonel Llewellin: As I explained in answer to a question on July 8, arrangements have been made for soldiers proceeding by train to be provided with their own rations. There is therefore no necessity for them to incur any charge service or other, on the train.

Welsh Highland Railway

Mr. W. Thorne (Plaistow—Lab.,) on July 17, asked the Parliamentary Secretary to the Ministry of Supply whether he could give any information in connection with the sale of the Welsh Highland Railway, the length of the railway, and the price paid for it.

Captain Harold MacMillan (Parliamentary Secretary to the Ministry of Supply) replied that the material on the Welsh Highland Railway was requisitioned by the Ministry of Supply some little while ago and was now in process of recovery for scrap purposes. The length of the track was approximately 21 miles and 57 chains. No claim for compensation had yet been received from the owners and consequently no payment had been made.

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices July 25, 1941	Prices Rise/Fall
G.W.R.				
Cons. Ord.	52	22½	36	—
5% Con. Pref. ...	103½	58	100½	—
5% Red. Pref. (1950)	105½	88	104	—
4% Deb.	107½	90½	107½	—
4½% Deb.	108½	96½	111	—
4½% Deb.	114½	96	115½	—
5% Deb.	124	106	129	—
2½% Deb.	66½	57	66	—
5% Rt. Charge ...	117½	97	125½	—
5% Co. Guar. ...	117	90½	122½	— 1
M.S.R.				
Ord	24½	9	13½	— ½
4% Pref (1923) ...	60½	21½	43½	+ 1
4% Pref	70½	35	59	—
5% Red. Pref. (1955)	94½	60	84½	—
4% Deb.	101½	81	101½	—
5% Red. Deb. (1952)	109½	102	108	—
4% Guar.	93½	65	94½	—
L.N.E.R.				
5% Pref. Ord. ...	8½	1½	2½	—
Def. Ord.	4½	1½	1½	+ ½
4% First Pref. ...	60	20	43½	+ 1
4% Second Pref. ...	22½	6½	16	—
5% Red. Pref. (1955)	80	34½	68½	+ 2
4% First Guar. ...	86½	56	85½	—
4% Second Guar. ...	77½	37	74½	—
3% Deb.	73½	54½	75½	—
4% Deb.	97½	74	100½	—
5% Red. Deb. (1947)	107	96½	104	—
4½% Sinking Fund Red. Deb.	104	98	101½	—
SOUTHERN				
Pref. Ord.	79	34	54½	+ 1
Def. Ord.	22½	7	11½	— ½
5% Pref.	104½	58½	98½	—
5% Red. Pref. (1964)	105	85	104½	—
5% Guar. Pref. ...	116½	90	123½	—
5% Red. Guar. Pref. (1957)	114⅞	94	113½	—
4% Deb.	106½	84½	104½	— 1
5% Deb.	122½	100	126½	—
4% Red. Deb. (1962–67)	106	96½	105	—
4% Red. Deb. (1970–80)	106½	93	105	—
FORTH BRIDGE				
4% Deb.	95½	87	92½	—
4% Guar.	93½	81½	92½	—
L.P.T.B.				
4½% "A"	116	103	113½	— 1
5% "A"	121½	107	123½	—
4½% "T.F.A." ...	105½	101	101½	—
5% "B"	116	102	109½	—
"C"	65½	24	37	—
MERSEY				
Ord.	26	18½	20½	—
4% Perp. Deb. ...	92½	86½	91½	—
3% Perp. Deb. ...	68	63	66½	—
3% Perp. Pref. ...	57	50½	56	+ 2½
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4½	1½	6½	—
G. SOUTHERN				
Ord.	12½	4	7	— 1½
Pref.	15½	6	7½	— 1½
Guar.	36	15	24	+ 3
Deb.	55½	40	50	+ 1

Railway Stock Market

Pending further clarification of recent events in the war and international affairs, business in all sections of the Stock Exchange has been further reduced at the time of writing. Absence of selling, and further indications of general willingness to be prepared to take more than a short view were a helpful market factor, and despite the small volume of buying orders, the general undertone remained fairly steady. In fact, there was very little precautionary marking down of prices, and in many directions securities were again in moderate supply in the market. In some instances, owing to the small amount of business, there has been a widening of quotations, which, however, in various instances, subsequently proved to be out of line with actual dealing prices. Although some home railway stocks went "ex" the interim dividend payments, prices generally were little changed on balance, and movements continued to be moderate. As was expected, the interim payments are in each instance the same as those for 1940, and in view of the forthcoming change in the financial agreement with the Government, net revenues for the first half of the current year are not at present ascertainable. For the time being, therefore, railway stockholders are in no better position as regards a satisfactory basis on which to assess the situation and outlook under war conditions.

Before this will be possible details of changes in the financial agreement will have to be announced, and consequently it seems likely that for the present, at any rate, home railway junior stocks will continue to be valued on a high-yield basis. Nevertheless, the view in the City is that it is not unreasonable to assume that it should be possible to maintain total dividends at the same rates as those for 1940. On this basis, Great Western ordinary yields approximately 11½ per cent. at the current price; L.M.S.R. ordinary over 11 per cent.; Southern preferred more than 9¼ per cent., and Southern deferred over 10½ per cent. If, as is hoped, maintenance of the dividends on these stocks is assured, a general rise in prices to better levels would be regarded as fully justified. Reference has frequently been made to the generous yields also shown on L.M.S.R. 1923 preference and on L.N.E.R. first preference, which in each case continue to work out at over 9½ per cent. Possibly these two stocks are the most undervalued in the home railway list; there is, of course, every reason to assume that they will continue to be assured of their full dividends during the period of the war, and that the latter will be earned with a satisfactory margin. At their current price, L.N.E.R. second preference yield no less than 12½ per cent., but in this case, whether the full 4 per cent. dividend will continue to be paid may turn closely on changes in the financial agreement with the Government. Where movements in prior-charge stocks have been recorded they were mostly reactionary, but all of these stocks have remained firmly held in view of their investment merits.

Compared with a week ago, Great Western ordinary has reacted further from 35⅜ to 34½, but the price is now "ex" the interim dividend. Great Western debentures were slightly lower at 107, but the preference stock again held the recent improvement to 101½. L.M.S.R. ordinary was 13¼, compared with 13⅜ a week ago, and at 58 and 42 respectively the senior and 1923 preference stocks were only fractionally lower, allowing for deduction of half-yearly dividends from prices. At 86 and 75, respectively, L.N.E.R. first and second guaranteed were quite well maintained, as was the first preference at 43½, but the second preference was easier at 15¼. Southern preferred at 52¾ xd. was lower on balance, but the deferred was unchanged at 11⅝. London Transport "C" was 36¼ xd., compared with 37.

Where changed, Argentine and other foreign railway securities showed small declines. Canadian Pacific had a less active appearance, but the price was inclined to improve on the good traffic position.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1940-41	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1940	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1940	Prices: Lowest 1940	Prices: July 25, 1941	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	20.7.41	18,740	+ 1,160	29	518,020	533,480	— 15,460	Ord. Stk.	11½	3½	5½	Nil
	Argentine North Eastern ...	753	19.7.41	ps. 216,500	+ ps.27,500	3	ps. 539,600	ps. 512,000	+ ps.27,600	,,	3½	1	2	Nil
	Bolivar	174	June, 1941	3,940	+ 10	26	23,072	24,580	— 1,508	6 p.c. Deb.	6½	5	6¼	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	5	4½	Nil
	Buenos Ayres & Pacific ...	2,801	12.7.41	ps.1,425,000	+ ps.347,000	2	ps.2,667,000	ps.2, 101,000	+ ps. 566,000	Ord. Stk.	4¼	1	2½	Nil
	Buenos Aires Central ...	190	18.1.41	$70,400	— $20,200	29	$2,477,400	$2,994,900	— $517,500	—	—	—	—	—
	Buenos Ayres Great Southern	5,082	12.7.41	ps.1,865,000	+ ps.49,000	2	ps.3,471,000	ps.3,796,000	— ps.325,000	Ord. Stk.	10⅜	3	5½	Nil
	Buenos Ayres Western ...	1,930	12.7.41	ps.695,000	+ ps.51,000	2	ps. 1,350,000	ps. 1,205,000	+ ps. 145,000	,,	8⅜	2	3¾	Nil
	Central Argentine	3,700	19.7.41	ps. 1,854,900	+ ps.366,400	3	ps. 4,866,250	ps. 4,167,800	+ ps.698,450	,,	8¾	2	4	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4	¼	1½	Nil
	Cent. Uruguay of M. Video	972	12.7.41	24,802	+ 6,887	2	42.379	33,162	+ 9.217	Ord. Stk.	3¾	¼	2	Nil
	Costa Rica	188	April 1941	15,450	— 2,390	43	152,170	176.057	— 23.887	Stk.	23½	14	15½	12½
	Dorada	70	June, 1941	13,200	+ 300	26	75,300	72,000	+ 3,300	1 Mt. Db	99	97½	97	6 7/8
	Entre Rios	808	19.7.41	ps. 333,300	+ ps.74,400	3	ps. 829,300	ps. 725,100	+ ps.104 200	Ord. Stk.	4	¼	1½	Nil
	Great Western of Brazil ...	1,016	19.7.41	7,100	+ 400	29	265,000	320,800	— 37,800	Ord. Sh.	4/-	1/-	7/8	Ni
	International of Cl. Amer. ...	794	May 1941	$553,852	+ $56,333	22	$2,521,794	$2,840,950	— $319,156	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref	9d.	9d.	¼	N
	La Guaira & Caracas... ...	22¾	June,1941	5,075	+ 315	26	35,220	39,435	— 4,215	—	6	4	—	—
	Leopoldina	1,918	12.7.41	26,538	+ 3,613	28	669,333	604,502	+ 64,831	Ord. Stk.	2 2/8	¼	1	Nil
	Mexican	483	14.7.41	ps. 270,000	— ps. 5,400	2	ps. 577,900	ps. 531,000	+ ps 46,900	,,	2/11¼	⅛	⅛	Nil
	Midland of Uruguay ...	319	May, 1941	15,465	+ 1,693	48	135,666	121,022	+ 14.644	—	—	—	—	—
	Nitrate	386	15.7.41	5,122	— 4,454	28	58,832	97,938	— 39,106	Ord. Sh.	2¼	1½	2½	5½
	Paraguay Central	274	19.7.41	$3,561,000	+ $91,000	3	$10,092,000	$12,505,000	— $2,413.000	Pr. Li. Stk.	41	36	28½	15½
	Peruvian Corporation ...	1,059	June, 1941	63,288	— 7,119	52	772,792	820,597	— 47,805	Pref.	4	1	2	Nil
	Salvador	100	17.5.41	c13.394	+ c3.581	46	c726,680	c916.614	— c189,934	—	—	—	—	—
	San Paulo	153½	13.7.41	38,125	— 2,355	28	1,042,686	1,029,870	+ 12,816	Ord. Stk.	50	23	30½	6 7/8
	Taltal	160	June, 1941	2,050	- 1,220	52	32,595	29,590	+ 3,005	Ord. Sh.	15/1¼	⅜	⅜	Nil
	United of Havana	1,346	19.7.41	17,181	— 358	3	50.653	48,369	+ 2,284	Ord. Stk.	⅜	¼	¼	Nil
	Uruguay Northern	73	May, 1941	1,442	+ 329	48	12,771	12,356	+ 415	—	—	—	—	—
Canada	Canadian National	23,579	14.7.41	1,108,781	+ 9,881	28	30,535,290	24,780,410	+ 5,754,880	—	—	—	—	—
	Canadian Northern ...	—	—	—	—	—	—	—	— 4 p.c.	Perp. Dbs.	86	68	91¼	4⅜
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gr.	105¾	95½	101¼	3½
	Canadian Pacific	17,153	14.7.41	833,400	+ 171,400	28	21,608,800	16,385,400	+ 5,223.400	Ord. Stk.	9 7/16	4⅜	9	Nil
India	Assam Bengal...	1,329	—	—	+ —		—	—	—	Ord. Stk.	99⅜	71	100	3
	Barsi Light	202	30.4.41	5,557	+ 2,107	4	19,687	13,920	+ 5 767	—	—	—	—	—
	Bengal & North Western ...	2,086	30.6.41	263,700	+ 21,548	13	808,125	837,801	— 29,676	Ord. Stk.	283	234	300	5 7/16
	Bengal-Nagpur	3,269	30.4.41	236,925	+ 24,281	4	756,375	772,770	— 16,395	,,	96	83⅜	100½	4
	Bombay, Baroda & Cl. India	2,986	10.7.41	187,425	— 47,850	14	3,020.175	2,921,625	+ 98,550	,,	108	99	108½	5½
	Madras & Southern Mahratta	2,939	30.4.41	196,125	— 4,637	4	586,500	575,869	+ 10,631	,,	104	97⅜	102½	7 7/16
	Rohilkund & Kumaon ...	571	30.6.41	63,975	+ 1,524	13	192,900	202.019	— 9,119	,,	284	238	295	5 7/16
	South Indian	2,500	20.4.41	127,626	+ 2,675	3	269,156	242,933	+ 26 223	,,	93¾	83	97½	4⅜
Various	Beira	204	May 1941	79,211	—	35	574,352	—	— 2	—	—	—	—	—
	Egyptian Delta	610	20.5.41	6,428	+ 1,837	6	25,728	19,436	+ 6,29	Prf. Sh.	7/10½	⅜	⅜	Nil
	Kenya & Uganda	1,625	—	—	—	—	—	—	—	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	— 5	B. Deb.	53	44½	49	6½
	Midland of W. Australia ...	277	Mar. 1941	14.597	+ 2.092	39	134,201	115,376	+ 18.821	Inc. Deb.	88	80	87½	6⅜
	Nigerian	1,900	31.3.41	100,291	+ 53,330	52	2,494,207	2.108,686	+ 385,52	—	—	—	—	—
	Rhodesia	2,442	May 1941	479,908	—	35	3,763,016	—	—	—	—	—	—	—
	South Africa	13,287	7.6.41	731,929	+ 84.424	10	7,071,382	6,313,541	+ 757,841	—	—	—	—	—
	Victoria	4,774	Mar. 1941	973,121	+ 89,902	39	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of 1/8 Argentine traffics are given in pesos
† Receipts are calculated @ 1s. 6d. to the rupee